



# California Regional Water Quality Control Board

## San Francisco Bay Region

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Arnold Schwarzenegger  
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NOV 24 2004

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File No. 2159.5022 (GK)

Ms. Beverly James, Manager-Engineer  
Novato Sanitary District  
500 Davidson Street  
Novato, CA 94945

Dear Ms. James:

**SUBJECT: TRANSMITTAL OF FINAL ORDER NO. R2-2004-0093  
FOR NOVATO SANITARY DISTRICT, NOVATO, MARIN COUNTY**

Dear Ms. James,

Attached is a copy of the Final Order No. R2-2004-0093 adopted by the Water Board on November 17, 2004. The requirements of this Order are effective starting on February 1, 2005.

Please note that we made minor modifications to the Order, which include (1) modifying Finding No. 68 to make it sequential, (2) modifying the Self-Monitoring Program (SMP) to remove the previous case manager's name, (3) modifying the SMP to clarify grab samples can be taken for enterococcus during blending events, and (4) several formatting changes. These minor modifications are made pursuant to Provision 19 of the Order in accordance with 40CFR122.63.

If you have any questions regarding this letter, please contact Gina Kathuria at (510) 622-2378 or email at [gkathuria@waterboards.ca.gov](mailto:gkathuria@waterboards.ca.gov).

Sincerely,

Bruce H. Wolfe  
Executive Officer

Attachment: Order No. R2-2004-0093

Copy to: Doug Eberhardt  
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San Francisco, CA 94105

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*Preserving, enhancing, and restoring the San Francisco Bay Area's waters for over 50 years*

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**

**SAN FRANCISCO BAY REGION**

**ORDER NO: R2-2004-0093**

**NPDES PERMIT NO. CA0037958**

**REISSUING WASTE DISCHARGE REQUIREMENTS FOR:**

**NOVATO SANITARY DISTRICT**

**NOVATO**

**MARIN COUNTY**

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**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**

**SAN FRANCISCO BAY REGION**

**ORDER NO: R2-2004-0093**  
**NPDES PERMIT NO. CA0037958**

**REISSUING WASTE DISCHARGE REQUIREMENTS FOR:**

**NOVATO SANITARY DISTRICT**  
**NOVATO, MARIN COUNTY**

**FINDINGS**

The California Regional Water Quality Control Board, San Francisco Bay Region (the Board) finds that:

1. On November 24, 2003, the Novato Sanitary District (the Discharger) applied to the San Francisco Bay Regional Water Quality Control Board (the Board) for reissuance of its National Pollutant Discharge Elimination System (NPDES) Permit No. CA0037958.

**Purpose of Order**

2. This Order serves as the NPDES Permit regulating discharge of treated wastewater into San Pablo Bay, a water of the State and the United States. This discharge was previously regulated by the Board's Order No. 99-036 and the Board's April 16, 2003, Order No. R2-2003-0029 amending Order No. 99-036 (together the existing Permit).

**Facility Description**

3. The Discharger owns and operates a wastewater collection system, two municipal wastewater treatment facilities (the Novato and Ignacio plants, collectively the WWTPs), and one combined effluent discharge outfall (E-003) to the intertidal mud flats of San Pablo Bay (the subject discharge), adjacent to the former Hamilton Air Force Base. The WWTPs collect sanitary waste from a primarily residential service area serving the City of Novato and adjacent areas with a current population of about 60,000. The Discharger presently discharges an average dry weather flow (ADWF) of 5.4 million gallons per day (MGD), from the WWTPs into San Pablo Bay.
4. A location map showing the WWTPs and the combined outfall is included as Attachment 1 to this Order.

**Collection System**

5. The Discharger's wastewater collection system collects and transports wastewater flows to the WWTPs through a series of gravity sewers and interceptors, pump stations, and force mains, designed to handle peak wet weather flows. The combined conveyance and collection systems include about 200 miles of sewer lines and 35 wastewater pump stations. The

discharger has an ongoing program preventive maintenance and capital improvement programs for these sewer lines and pump stations to ensure adequate capacity and reliability of the collection system.

### **Sanitary Sewer Management Plan**

6. On October 15, 2003, the Board adopted Order No. RB2-2003-0095 establishing a collaborative effort with the Bay Area Clean Water Agencies (BACWA) to develop guidance for sanitary sewer management plants (SSMPs) aimed at reducing or eliminating sanitary sewer overflows (SSOs), and for uniform, electronic reporting of SSOs to the Board to facilitate the Board's assessment of the problem regionally. This Order requires the Discharger to fully participate in the BACWA effort, to develop and implement an SSMP once the guidance is available, and to report SSOs electronically once the reporting system is developed.

### **Treatment Plant Description**

7. The Ignacio Treatment Plant (E-001) utilizes primary clarification, biofiltration, secondary clarification, nitrification, gravity filtration and disinfection with chlorine. All flows at the Ignacio plant receive full secondary treatment.
8. The Novato Treatment Plant (E-002) utilizes primary clarification, activated sludge treatment, secondary clarification, nitrification, gravity filtration, and disinfection with chlorine. The treatment processes vary depending on influent flow:

DDWF, 4.53 MGD, and wet  
weather flows up to 9 MGD

Treatment with all unit processes

Wet weather flows between 9 MGD  
and 16 MGD

Primary treatment plus gravity filtration and  
disinfection

Wet weather flows above 16 MGD

Gravity filtration plus disinfection

### **Discharge Description**

9. During the discharge season, September 1 through May 31 annually, effluent from both WWTPs is dechlorinated and discharged from the combined outfall (E-003) through a multi-port diffuser about 950 feet offshore at Latitude 122 degrees 29 minutes 24 seconds, Longitude 38 degrees 03 minutes 36 seconds. The subject discharge is in the intertidal zone adjacent to the former Hamilton Air Force Base. During the discharge prohibition period, June 1 through August 31 annually, the effluent is held in reclamation ponds for sprinkler irrigation on Discharger-controlled pasturelands. The combined outfall is a shallow water discharge, and discharge is prohibited from June 1 through August 31, annually (the summer prohibition), during which period the effluent is collected in ponds and used for reclamation.
10. The discharge diffuser is located in the intertidal zone and is submerged at the +1 foot Mean Lower Low Water (MLLW) tidal elevation and above. At lower tidal elevations, the outfall is exposed and the distance from the end of the diffuser to the San Pablo Bay water line can

range from 1000 to 3500 feet. At these times, the discharge does not receive an initial dilution of 10:1, and therefore the Board has classified this as a shallow-water discharge.

11. The attached Fact Sheet (incorporated here by reference) describes the subject discharge in detail, based on information contained in the Discharger's Self-Monitoring Reports. The data are representative of the effluent during the discharge season from October 1999 through April 2004 (the subject discharge data).
12. Process diagrams for the WWTPs are included as Attachment 2 to this Order.
13. The United States Environmental Protection Agency (the U.S. EPA) and the Board have classified this discharge as a major discharge.

#### **Treated Wastewater Reclamation**

14. Board Order No. 92-065 contains the reclamation requirements for the Discharger's reclamation program. Order No. 92-065 also requires the Discharger to maintain a wildlife management pond in addition to the storage ponds and spray irrigation.
15. From June 1 through August 31, the combined effluent is discharged to storage ponds for sprinkler irrigation of 820 acres of Discharger-controlled pasturelands used for beef cattle grazing and irrigated hay production. Although the discharge prohibition lasts for 3 months, the Discharger typically reclaims wastewater and irrigates five or more months per year. The Discharger, together with the North Marine Water District (NMWD), has filed a Notice of Intent for, the construction and operation of a recycled water treatment facility, and is therefore subject to the Board's January 17, 1996, *General Water Reuse Requirements For: Municipal Wastewater And Water Agencies* (Board Order No. 96-011).
16. During the wet weather discharge period (November 1 through April 30), treated wastewater from the storage ponds may be discharged directly through the combined outfall, if it meets the requirements of the Discharger's *Reclamation Pond Wet Season Discharge Sediment Control and Monitoring Plan*. This Plan was approved by the Executive Officer in October 1999 and is adequate to prevent entrainment of pond sediments into the discharge.
17. Water held in the reclamation ponds before being discharged through the combined outfall during the dry weather discharge months (May, September, and October) may be discharged if it meets all the requirements in this Order, as described in the Provisions, below. Pre-discharge monitoring of water held in the reclamation ponds is required during the dry weather discharge period (May 1 – 31 and September 1 – October 31, annually).

#### **Storm Water Discharge**

18. The Code of Federal Regulations contains the U.S. EPA's stormwater discharge regulations (40 CFR Parts 122, 123, and 124). Those regulations regulate stormwater discharges from specific categories of industrial activity, including municipal wastewater treatment facilities (Publicly Owned Treatment Works – POTWs). They require POTWs to obtain an NPDES permit and to implement Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology to control pollutants in industrial storm water discharges.

19. The State Water Resources Control Board (the State Board) reissued its statewide NPDES permit for storm water discharges associated with industrial activities (NPDES General Permit CAS000001 – the General Permit) on April 17, 1997. The General Permit applies to POTWs.
20. The Discharger is not subject to stormwater regulation under the U.S. EPA's regulations or the General Permit because all stormwater or rainwater coming into contact with equipment or sewage at the WWTPs, and the pump stations serving the WWTPs, is collected and directed to the WWTPs' headworks for treatment.
21. The Marin County Storm Water Pollution Prevention Program (MCSTOPP) is a joint project of eleven cities and towns and the County of Marin. The Discharger participates in MCSTOPP and works with the City of San Rafael and the Central Marin Sanitation Agency who have enforcement authority under the City of San Rafael's storm water ordinance. The storm water program strives to reduce the discharge of pollutants to creeks, wetlands and San Francisco Bay. The MCSTOPP is cooperating with the Marin County Flood Control District to implement innovative watershed preservation measures for the protection of beneficial uses of creeks and wetlands. These measures include using best management practices, public education, enforcement, and an ongoing pollution prevention program.

#### **Sludge Handling and Disposal**

22. The Novato plant has primary and secondary anaerobic digesters for sludge digestion, followed by storage ponds for thickening. The Ignacio plant has a primary anaerobic digester, followed by storage ponds for thickening. The thickened sludge from both plants is applied on a 14.4 acre dedicated land disposal site at the reclamation area.
23. Sludge storage and disposal are subject to regulation by the U.S. EPA pursuant to Title 40, Code of Federal Regulations, Part 503 (40 CFR Part 503), as further described in the Sludge Management Practices section, below.

#### **Pretreatment and Pollution Prevention Programs**

24. The Discharger has both a formal pretreatment program and a pollution prevention program.
  - a. Section 2.4.5 of the SIP specifies under what situations and for which priority pollutant(s) (i.e., reportable priority pollutants) the Discharger shall be required to conduct a Pollutant Minimization Program in accordance with Section 2.4.5.1.
  - b. There may be some redundancy between the Pollution Prevention Program and the Pollutant Minimization Program requirements.
  - c. Where the two programs' requirements overlap, the Discharger is allowed to continue/modify/expand its existing Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.
  - d. For constituents identified under Effluent Limitations, Section B, the Discharger will conduct appropriate source control or pollutant minimization measures that are consistent with its approved Pretreatment and Pollution Prevention Programs. For constituents with compliance schedules under this permit, the applicable source control/pollutant minimization requirements of Section 2.1 of the SIP will also apply.

- e. These efforts currently focus on copper, mercury, 4,4'-DDE, dieldrin, and heptachlor epoxide. These programs' activities include:
    - i. Copper-related (pretreatment program and pollution prevention program):
      - Zero discharge requirement for industrial metal finisher;
    - ii. Copper-related (pollution prevention program):
      - Vehicle services outreach encouraging zero discharge;
      - Automotive shop inspections;
      - Evaluating corrosion as a source of copper and zinc;
      - Water supply corrosion control (55% copper reduction achieved);
    - iii. Mercury-related (pollution prevention program):
      - BMPs, surveys, and inspections of dental offices;
      - Inspections of medical clinics and laboratories;
      - Fluorescent lamp collection and recycling;
      - Thermometer collection and recycling;
      - Battery collection and recycling;
      - Semi-annual newsletter concerning proper disposal of mercury-containing products;
      - Recognition of a mercury-free hospital in the service area;
    - iv. 4,4'-DDE, dieldrin and heptachlor epoxide-related (pollution prevention program):
      - Household hazardous waste collection program
      - Small business collection service
25. The Board's October 15, 2003, Resolution R2-2003-0096 supports collaboration between the Board and BACWA to promote P2 Program development, consistency, and excellence. Resolution R2-2003-0096 contains eleven guiding principles, including promoting watershed, cross-program and cross-media approaches to pollution prevention, and jointly developing assessment tools for individual Discharger's program performance that may include peer reviews, self-audits or other tools. The guiding principles will be used to develop tools such as "P2 menus" for specific pollutants, and to provide guidance in improving P2 program efficiency and accountability.
26. The Discharger has implemented and is maintaining a U.S. EPA approved pretreatment program in accordance with Federal Pretreatment Regulations (40 CFR 403), with Provision 6 of this Order, and the requirements specified in Attachment H, "Pretreatment Requirements."

#### **Treatment Plant Upgrade**

27. The Ignacio Treatment Plant is currently unable to attain the standard technology-based effluent limitations for biochemical oxygen demand (BOD<sub>5</sub>, 20°C - BOD) and total suspended solids (TSS). The Discharger anticipates future growth in its service area, and is implementing a strategic plan to accommodate that growth and to comply with the BOD and TSS limitations by either upgrading or replacing the Ignacio plant. The implementation schedule for this strategic plan is contained in the Discharger's April 28, 2004 letter *Workplan for Ignacio Treatment Plant, NPDES Permit No. CA0037958* (Attachment G,

hereby incorporated by reference). The strategic plan may ultimately include capital improvements to the Ignacio Treatment Plant or consolidation and augmentation of treatment capacity at one or the other of the existing treatment plants, with the remaining plant being decommissioned. Therefore, this Order continues the previous NPDES Permit's interim performance-based effluent limits for the Ignacio Plant's BOD and TSS, and the March 31, 2008, compliance schedule for the final limits. This Order contains a Provision requiring an implementation schedule for attainment of the final BOD and TSS limits by March 31, 2008, together with periodic progress reports.

### **Regional Monitoring Program**

28. Board Resolution No. 92-043 requires major NPDES permit holders in the Region to participate in a collaborative effort to report on the water quality of the San Francisco Bay. This effort is carried out through the San Francisco Estuary Institute and is known as the San Francisco Bay Regional Monitoring Program for Trace Substances (the Regional Monitoring Program – the RMP). This Order specifies that the Discharger shall continue to participate in the RMP, including collection of data on pollutants and toxicity in water, sediment and biota of the estuary, in lieu of the more intensive monitoring that would be required to adequately characterize the discharge's impact to the receiving water.

### **APPLICABLE PLANS, POLICIES, AND REGULATIONS**

29. The attached Fact Sheet describes the regulatory basis of this Order in more detail, including the Board's June 21, 1995 revised *Water Quality Control Plan, San Francisco Bay Basin (Region 2)* (the Basin Plan), the State Water Resource Control Board's March 2, 2000 *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the State Implementation Plan or SIP) as subsequently approved by the Office of Administrative Law and the U.S. EPA, the U.S. EPA's May 18, 2000 *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (the California Toxics Rule – the CTR), the U.S. EPA's National Toxics Rule [Federal Register Volume 57, 22 December 1992, page 60848] as promulgated and subsequently amended (the NTR). The Basin Plan identified beneficial uses and water quality objectives (WQOs) for waters of the State in the Region, and the CTR and NTR contain water quality criteria (WQCs) that apply to those waters.

### **Beneficial Uses**

30. The Basin Plan identifies the following beneficial uses for San Pablo Bay:

- Commercial and Sport Fishing
- Estuarine Habitat
- Industrial Service Supply
- Fish Migration
- Navigation
- Preservation of Rare and Endangered Species
- Water Contact Recreation
- Non-contact Recreation
- Shell Fish Harvesting
- Fish Spawning

- Wildlife Habitat.

### **Shallow Water Discharge Prohibition and Exception**

31. Basin Plan Section 4, Table 4-1 prohibits the discharge of wastewater that does not receive a minimum initial dilution of at least 10:1, or into any nontidal water, dead-end slough, similar confined waters, areas or any immediate tributaries thereof (the discharge prohibition). The Basin Plan states that the Board may consider exceptions to the above prohibition, including exceptions for discharges which are part of a reclamation project, or which have demonstrated net environmental benefits as a result of the discharge.
32. The discharge prohibition applies to the WWTPs' discharge because it does not receive an initial dilution of at least 10:1 at all times, as described in the findings above.
33. The previous NPDES Permit granted a partial exception to the discharge prohibition, i.e. maintaining a discharge prohibition between from June 1 through August 31, annually. The partial exception was granted because the Discharger operates a significant reclamation program, and operates a pond for wildlife habitat as mitigation for past wetland fill. This Order continues that exception and discharge prohibition, subject to the conditions listed in Discharge Prohibitions, below.

### **Dilution and Assimilative Capacity**

34. The Discharger conducted a dye study and modeling effort (the dilution studies) for the area immediately adjacent to the outfall as part of an application for an exemption to the Basin Plan's shallow water discharge prohibition. The Discharger has not requested a dilution credit at this time. The dilution studies and current ambient receiving water data do not fully address the effects of other discharges in the area upon the receiving water. Also, the receiving water is listed as impaired by mercury, a bioaccumulative pollutant, as described in the section Impaired Water Bodies and TMDLs, below, and the Board finds that there is no additional assimilative capacity available for mercury in the receiving water. Therefore, this Order does not grant dilution credit, and the effluent limitations contained in this permit are calculated assuming no dilution, as detailed in the attached Fact Sheet.

## **BASIS FOR EFFLUENT LIMITATIONS**

### **General Basis**

35. *Federal Water Pollution Control Act.* Effluent limitations and toxic effluent standards contained in this Order are established pursuant to sections 301 through 305, and 307 of the Federal Water Pollution Control Act and amendments thereto as applicable to the discharges herein.
36. *Applicable Water Quality Objectives.* The WQOs, WQCs, effluent limitations, and calculations contained in this Order are based on the statutes, documents, and guidance detailed in the attached Fact Sheet.

### Salinity

37. *Basin Plan Salinity Policy.* The Basin Plan states that the salinity characteristics of the receiving water (freshwater, salt water, or estuarine) shall be considered in determining the applicable WQOs. It is appropriate to determine the receiving water's salinity using the Basin Plan's definitions for constituents for which the Basin Plan specifies WQOs. Freshwater objectives (adjusted for the receiving water's ambient hardness) apply to discharges to waters both outside the zone of tidal influence, and with salinities lower than 5 parts per thousand (ppt) at least 75 percent of the time in a normal water year. Marine (saltwater) objectives apply to discharges to waters with salinities greater than 5 ppt at least 75 percent of the time in a normal water year. For discharges to waters with salinities in between these two categories, or to tidally influenced freshwaters that support estuarine beneficial uses, the objectives shall be the lower of the marine or hardness-adjusted freshwater objectives for each substance [Basin Plan, page 4-13].
38. *CTR Receiving Water Salinity Policy.* The CTR states that the receiving water's salinity characteristics shall be considered in determining the applicable WQCs. It is appropriate to determine the receiving water's salinity using the CTR's definitions for constituents with WQCs specified in the CTR. Freshwater criteria (adjusted for the receiving water's ambient hardness) apply to discharges to waters with salinities equal to or less than 1 ppt at least 95 percent of the time in a normal water year. Saltwater criteria apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to waters with salinities in between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria shall be the lower of the saltwater or the hardness-adjusted freshwater criteria for each substance with WQCs specified in the CTR.
39. *Receiving Water Salinity.* The receiving waters for the subject discharge are the waters of San Pablo Bay. The Basin Plan specifically identifies San Pablo Bay as estuarine [Basin Plan Table 2-6, pg. 2-21]. Therefore, the applicable WQCs or WQOs are the lower of the marine or adjusted freshwater WQOs or WQCs.
40. *Receiving Water Hardness.* Hardness-dependant WQOs/WQCs were adjusted using a hardness of 138 milligrams per liter (mg/l). This value is based on an analysis of RMP data points collected for San Pablo Bay as detailed in the attached Fact Sheet.

### Effluent Limits

41. *Technology-Based Effluent Limits.* This Order contains technology-based limits for conventional pollutants, consistent with the Basin Plan and Title 40 CFR, Part 133.102, to ensure that full secondary treatment is achieved by the WWTPs. During the dry-weather discharge season (May, September, and October, annually), the technology-based limits are more stringent than those contained in the Basin Plan and 41 CFR 125. The Fact Sheet describes the basis for these more stringent technology-based limits. These conventional effluent limits are the same as those in the prior permit for the following pollutants:
- BOD/Carbonaceous BOD (CBOD),
  - BOD percent removal,
  - TSS,
  - TSS percent removal,



- pH,
- Oil and grease, and
- Total chlorine residual.

The Basin Plan Amendment adopted by the Board on January 21, 2004, (the Amendment) removed the settleable matter effluent limitations for secondary sewage treatment plants because it was not an appropriate indicator of sewage treatment plants' performance. Although the Amendment does not become effective until it is approved by the Office of Administrative Law, this Order does not impose settleable matter limits, based on the same rationale as the Amendment's removal of them. Should this change not be approved by the Office of Administrative Law, the Board will amend this Order to reinstate the settleable matter limits, as appropriate.

42. *Water Quality Based Effluent Limitations.* Toxic substances are regulated by water quality based effluent limitations (WQBELs) derived from Basin Plan [Tables 3-3 and 3-4], the CTR and the NTR, best professional judgment (BPJ), or a combination of these sources, as further defined in the attached Fact Sheet. Further details about the effluent limitations contained in this Permit are given below and in the attached Fact Sheet.
43. *Ammonia.* This Order discontinues the previous NPDES permit's 4 mg/L annual average ammonia effluent limitation because the 6 mg/L monthly average ammonia effluent limitation adequately protects the receiving water.
44. *Receiving Water Ambient Background Data.* The RPA uses ambient background data from the RMP San Pablo Bay Station BD20 (the San Pablo Bay RMP station) from 1990 through 2000 as the most representative currently available background data. However, a data gap remains as to the ambient background conditions for the discharge into the intertidal mudflats of San Pablo Bay. San Pablo Bay station RMP data were used for this permit reissuance because this is the best available information representing ambient background condition for this discharge. The Discharger's outfall is located in the mudflats along the western edge of San Pablo Bay; and the San Pablo Bay RMP station is located in the center of San Pablo Bay. Therefore, there is significant distance from the discharge outfall to the RMP Station. For future permit reissuance, the Board may require better characterization of ambient background conditions near the outfall if such data are needed.
45. *Applicable Water Quality Objectives.* Page 3-4 of the Basin Plan contains a narrative objective for toxicity in order to protect beneficial uses:

"All waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental responses in aquatic organisms".

The Basin Plan also directs that ambient conditions shall be maintained until site-specific objectives are developed. Effluent limitations and provisions contained in this Order are designed to implement this objective, based on available information.

#### **Impaired Water Bodies and TMDLs**

46. On June 6, 2003, the U.S. EPA approved a revised list of impaired waterbodies prepared by the State in accordance with Section 303(d) of the federal Clean Water Act (the 2002 303(d) list) identifying specific water bodies where it is not expected that water quality standards

will be met after implementation of technology-based effluent limits on point sources. The 2002 303(d) list includes San Pablo Bay as impaired by:

- chlordane,
- DDT,
- diazinon,
- dieldrin,
- dioxin compounds,
- exotic species,
- furan compounds,
- mercury,
- nickel,
- PCBs,
- dioxin-like PCBs, and
- selenium.

47. Section 2.1.1 of the SIP states that for 303(d) listed bioaccumulative compounds, the Board should consider whether there is additional assimilative capacity, or if mass loadings should be limited to current levels. The Board finds that mass loading limits are warranted for certain 303(d)-listed bioaccumulative compounds (i.e., mercury) in the receiving water. Mass loading limits will ensure that the subject discharge does not contribute further to impairment of the narrative objective for bioaccumulation.
48. The Discharger is a member of the Bay Area Clean Water Agencies (BACWA), and is participating in a discharger-funded regional effort to develop site-specific, aquatic-life-based saltwater WQOs (site specific SSOs) for copper and nickel in San Pablo Bay and other San Francisco Bay segments north of the Dumbarton Bridge, as described in the attached Fact Sheet.
49. The Board plans to adopt Total Maximum Daily Loads (TMDLs) within the next ten (10) years for San Pablo Bay for the 303(d)-listed pollutants described above, except for dioxin and furan compounds. For dioxins and furans, the Board intends to consider this matter further after the U.S. EPA completes its national health reassessment. Future reviews of the 303(d) list for San Pablo Bay may result in revision of the schedules, provide schedules for other pollutants, or both.
50. The TMDLs will establish waste load allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources, and will result in achieving the water quality standards for the receiving water. Final effluent WQBELs for 303(d)-listed pollutants in this discharge will be based on WLAs contained in the respective TMDLs.

#### **Antibacksliding and Antidegradation**

51. The limitations in this Order comply with the prohibition contained in Clean Water Act Section 402(o) against establishment of less stringent WQBELs (antibacksliding) because:
  - a. For impairing pollutants, the revised final limitations will be consistent with TMDLs and WLAs, once they are established;

- b. For non-impairing pollutants, the final limitations are or will be consistent with current State WQOs/WQCs;
- c. Antibacksliding does not apply to interim limitations established under previous Orders;
- d. If antibacksliding policies apply to interim limitations under 402(o)(2)(c), a less stringent limitation is necessary because of events over which the Discharger has no control, and for which there is no reasonable available remedy, or
- e. if new information is available that was not available during previous permit issuance.

The IPBLs in this Order comply with antidegradation requirements and meet the requirements of the SIP because they hold the Discharger to performance levels that will not cause or contribute to water quality impairment or further water quality degradation. The pollutant-specific discussions below and in the attached Fact Sheet contain more detailed discussions of antidegradation and antibacksliding, where appropriate.

### **Interim Limits and Compliance Schedules**

52. Section 2.1.1 of the SIP states:

“the compliance schedule provisions for the development and adoption of a TMDL only apply when: ... (b) the Discharger has made appropriate commitments to support and expedite the development of the TMDL. In determining appropriate commitments, the RWQCB should consider the discharge's contribution to current loadings and the Discharger's ability to participate in TMDL development.”

Also, both the SIP and the Basin Plan require the Discharger to demonstrate the infeasibility of achieving immediate compliance with new limits to qualify for a compliance schedule. The attached Fact Sheet describes these requirements in more detail.

53. The Discharger is eligible for compliance schedules, partly because it has agreed to assist the Board in TMDL development through active participation in and contribution to BACWA. The Board's September 19, 2001, Resolution No. 01-103 authorizes the Executive Officer of the Board to enter into a Memorandum of Understanding with BACWA and other parties to accelerate the development of Water Quality Attainment Strategies, including TMDLs, for the San Francisco Bay-Delta and its tributaries.
54. The Discharger's July 22, 2004, *Infeasibility Analyses* (the feasibility study) asserts it is infeasible to immediately comply with the WQBELs calculated according to SIP Section 1.4 for copper, mercury, cyanide, 4,4'-DDE, dieldrin, and heptachlor epoxide.
- a. Board staff statistically analyzed recent WWTP copper and mercury performance data to validate the assertion of infeasibility to immediately comply with the final WQBELs calculated for them (see Section VI.6.d of the attached Fact Sheet). Based on that statistical analysis, the Board concurs with the Discharger's assertion of infeasibility to immediately comply with the final WQBELs for copper and mercury. Therefore, pursuant to SIP requirements, this Order continues the existing compliance schedules for copper and mercury and establishes interim numeric limitations and interim requirements

to control these metals, based on the specific bases described in the specific pollutant findings, below, and in the Provisions, below.

- b. This Order establishes an interim performance-based mercury mass limit in addition to the interim mercury concentration limits, to maintain the discharge's current mass loadings of mercury, a 303(d)-listed bioaccumulative pollutant, into San Pablo Bay. This interim performance-based mass limitation is based on the existing permit.
  - c. Pursuant to the SIP, this Order establishes numeric interim limits for copper, cyanide, mercury, 4,4'-DDE, dieldrin, and heptachlor epoxide.
  - d. Specific bases for these interim limits are described in the findings for each pollutant and in the attached Fact Sheet. The Board may take appropriate enforcement actions if interim limits and requirements are not met.
  - e. This Order requires continued monitoring for cyanide and selected semivolatiles as a condition of establishing the interim numeric interim limits for them.
55. The Board will implement the following strategy to collect water quality data and develop TMDLs:
- a. The Board will require dischargers to characterize the pollutant loads from their facilities into 303(d)-listed water bodies. Where current analytical techniques cannot detect 303-(d)-listed pollutants at their respective levels of concern or WQOs, the Dischargers may collectively assist in developing and implementing analytical techniques that will. The Board will use the results of these efforts to develop TMDLs, to update or revise the 303(d) list, or to develop modified WQOs for the impaired water bodies, including San Pablo Bay.
  - b. The Board has received, and anticipates continuing to receive, resources from federal and state agencies for the development of TMDLs. The Board intends to supplement these resources by allocating development costs among dischargers through appropriate funding mechanisms to ensure timely development of TMDLs.

#### **Specific Basis for Effluent Limits**

#### **Reasonable Potential Analysis**

56. Title 40 CFR Section 122.44(d)(1)(i) requires NPDES permits to include limits for all pollutants which have the reasonable potential to cause or contribute to an exceedance of an applicable water quality standard (that have reasonable potential). Board staff conducted a Reasonable Potential Analysis (RPA) using procedures in Section 1.3 of the SIP. Pursuant to Section 1.3 of the SIP, the RPA does not include dilution for any pollutant.
- a. The RPA identifies the observed maximum effluent concentration (MEC) and maximum receiving water ambient background concentration (B) for each pollutant, based on effluent concentration and receiving water monitoring data, respectively.
  - b. There are three triggers used in determining reasonable potential:

- i. The first trigger is activated if the MEC is greater than the lowest applicable WQO ( $MEC \geq WQO$ ), which has been adjusted for pH and translator data, if appropriate. If the MEC is greater than the adjusted WQO, then that pollutant has reasonable potential, and a WQBEL is required.
- ii. The second trigger is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO ( $B > WQO$ ), and either:
  - a) the MEC is less than the adjusted WQO ( $MEC < WQO$ ), or
  - b) the pollutant was not detected in any of the effluent samples and all of the detection levels are greater than or equal to the adjusted WQO.

If B is greater than the adjusted WQO, then a WQBEL is required.

- iii. The third trigger is activated under certain circumstances if a review of other information determines that a WQBEL is required to protect beneficial uses, even if both MEC and B are less than the WQO.

#### Translators

57. This Order employs site-specific translators for the nickel and copper WQCs used in the RPA. The translators are derived from data presented in the Discharger's attached July 23, 2004, *Novato Sanitary District Copper and Nickel Translator Calculation*, (Attachment F, incorporated here by reference). The attached Fact Sheet describes the translator data and derivation methods in more detail, and the site-specific translators are described in Table 1 and in pollutant-specific findings, below.

#### Reasonable Potential Analysis Results

58. Table 1, below, depicts the RPA results. The pollutant-specific findings, below, provide more detail on the RPA results, WQBELs, feasibility determinations, and interim limits and compliance schedules, as appropriate. The Fact Sheet includes the complete set of RPA tables as attachments.

Table 1. Results of RPA and final limit calculations.

Constituent	Water Quality Objective, $\mu\text{g/L}$	MEC, $\mu\text{g/L}$	Basis for Reasonable Potential	Final WQBELs, $\mu\text{g/L}$		Immediate Attainment Feasible?	IPBLs, $\mu\text{g/L}$	
				MDEL	AMEL		Daily Max.	Monthly Avg.
Copper	6.4 <sup>[2]</sup>	13	$MEC > C$	6.4	4.4	N	19	
Lead	4.8	3	$B (6.5) > C$	8.8	3.5	Y		
Mercury <sup>[1]</sup>	0.025	0.046	$MEC > C$	0.039	0.021	N		0.087
Nickel <sup>[1]</sup>	23.7 <sup>[2]</sup>	6.5	$B (30) > C$	36.1	23.6	Y		
Cyanide	1	7.3	$MEC > C$	1	0.61	N	9.2	
TCDD TEQ <sup>[1]</sup>	$1.4 \times 10^{-8}$	[3]	Trigger 3	[4]	[4]	[4]	[4]	[4]
4,4'-DDE <sup>[1]</sup>	0.00059	[3]	$B (0.001159) > C$	0.00059	0.00029	[5]	0.05 [6]	
4,4'-DDD <sup>[1]</sup>	0.00084	[3]	$B (0.001159) > C$	0.00084	0.0017	[5]	0.05 [6]	

Dieldrin <sup>[1]</sup>	0.00014	[3]	B (0.000237) > C	0.00028	0.00014	[5]	0.01 [6]	
Heptachlor Epoxide	0.00011	[3]	B (0.000121) > C	0.00022	0.00011	[5]	0.01 [6]	

Footnotes for Table 1.

1. Indicates constituents on 303(d) list, dioxin applies to Toxicity Equivalent Factors (TEQ) of 2,3,7,8-TCDD.
2. WQOs derived from CTR saltwater criteria (copper, 3.1 µg/L; nickel 7.1 µg/L) and site-specific translators (copper: 0.73 acute, 0.39 chronic; nickel 0.65 acute, 0.27 chronic).
3. All effluent data ND with detection limits greater than governing WQO/WQC.
4. Dioxin final limits will be based on WLAs contained in the dioxin TMDL. Attainment feasibility will be determined after WLAs and final QBELs are set.
5. All effluent data ND with detection limits above final QBELs, and attainability could not be determined.
6. IPBLs set to minimum levels (MLs) depicted on SIP page 4 – 4.

59. *Polynuclear Aromatic Hydrocarbons (PAHs)*. The RPA above was conducted on individual PAHs as required by the SIP and CTR using CTR criteria for the protection of human health. The Basin Plan has a saltwater objective for total PAHs of 15 µg/L as 24-hour average for the protection of aquatic life. A separate RPA was therefore performed on the total PAHs. However, effluent monitoring data for all 16 PAHs are non-detect. This Order requires the Discharger to continue characterizing the effluent for individual PAH constituents. Upon completion of the required effluent monitoring, the Board will use the gathered data to complete the RPA for all individual PAH constituents (as listed in the CTR) as well as on the total PAHs and determine if a water quality-based effluent limitation is required. Table 2., below lists the RPA conducted with the currently available data.

Table 2. RPA results for individual PAHs

CTR #	Constituent	WQO <sup>[1]</sup> (µg/L)	MEC (µg/L)	Maximum Ambient Background Conc. (µg/L)	RP <sup>[3]</sup>
56	Acenaphthene	2,700	<0.17	0.007	No
57	Acenaphthylene	No Criteria	<0.03	0.0004	No
58	Anthracene	110,000	<0.03	0.00002	No
60	Benzo(a)Anthracene	0.049	<0.12	0.00033	No
61	Benzo(a)Pyrene	0.049	<0.09	0.00032	No
62	Benzo(b)Fluoranthene	0.049	<0.11	0.00053	No
63	Benzo(ghi)Perylene	No Criteria	<0.06	0.000864	No
64	Benzo(k)Fluoranthene	0.049	<0.16	0.000326	No
73	Chrysene	0.049	<0.14	0.00043	No
74	Dibenzo(a,h)Anthracene	0.049	<0.04	0.000032	No
86	Fluoranthene	370	<0.03	0.002	No
87	Fluorene	14,000	<0.02	0.01	No
92	Indeno(1,2,3-cd) Pyrene	0.049	<0.04	0.000473	No

CTR #	Constituent	WQO <sup>[1]</sup> (µg/L)	MEC (µg/L)	Maximum Ambient Background Conc. (µg/L)	RP <sup>[3]</sup>
94	Naphthalene	No Criteria	<0.05	0.0012	No
99	Phenanthrene	No Criteria	<0.03	0.0014	No
100	Pyrene	11,000	<0.03	0.0016	No
	Total PAH	15	0 <sup>[2]</sup>	0.22	No

Footnotes for Table 2:

- [1] WQOs for individual PAHs are based on the numeric WQO for CTR protection of human health through consumption of organisms only; WQO for total PAH is from Basin Plan for the protection of aquatic life.
- [2] When data are non-detect, 0 is used to replace the MEC for calculating the MEC of total PAHs.
- [3] "No" since effluent data are all non-detect, minimum detection limits <WQOs, and background <WQOs.

60. *Other Constituents with Limited Data.* The Discharger has performed effluent sampling and analysis for various organic constituents listed in the CTR, and reasonable potential cannot be determined for some of them for various reasons. In some cases, the WQOs/WQCs are lower than current analytical methods can reliably measure, or ambient background concentration data are not available. The Discharger will continue to use analytical methods with the best feasible detection limits to monitor for these constituents. If detection limits improve such that it becomes possible to evaluate compliance with applicable WQCs, Board staff will conduct another RPA to determine whether additional WQBELs or continued monitoring are needed.
61. *Effluent Monitoring.* This Order does not contain effluent limits for constituents without reasonable potential, but Provision 2, below, requires continued monitoring. If concentrations of any of these constituents increase to the extent that they have reasonable potential or otherwise impact or threaten to impact water quality, the Discharger will be required to investigate the source of the increases and establish remedial measures.

**Specific Pollutants**

62. Copper

- a. *RPA Results* This Order establishes effluent limits for copper because the 16.34 µg/L maximum effluent concentration in the data set (the MEC) exceeds the governing WQO of 6.6 µg/L, demonstrating reasonable potential by Trigger 1, above. The governing WQO is based on the CTR's WQO of 3.1 µg/L for chronic saltwater protection as modified by using the site-specific chronic copper translator of 0.39. The attached Fact Sheet contains further details about the site specific translator.
- b. *WQBELs* The copper WQBELs calculated according to SIP procedures are 6.4 µg/L as a daily maximum (MDEL) and 4.4 µg/L as a monthly average (AMEL). These WQBELs are calculated without dilution.

- c. *Immediate Compliance Infeasible* The feasibility study asserts the Discharger cannot immediately comply with these WQBELs. Based on the Board staff's statistical analysis the Discharger's effluent data from October 1999 through April 2004, the Board determined that the assertion of infeasibility is substantiated for copper (see the attached Fact Sheet for detailed results of the statistical analysis).
- d. *Interim Performance Based Effluent Limits (IPBLs)* Because it is infeasible for the Discharger to immediately comply with the copper WQBELs, an IPBL is required. The IPBL is the more stringent of the previous NPDES permit limit or recent WWTP performance. Board staff's statistical analysis indicates the 99.87<sup>th</sup> percentile value of the WWTPs' recent copper effluent data is 19 µg/L, which is lower than the 22 µg/L IPBL developed for the previous NPDES Permit. Therefore, this Order establishes the copper IPBL as 19 µg/L, as a daily maximum.
- e. *Plant Performance and Attainability* During the period October 1999 through April 2004, the WWTPs' effluent MEC for copper was 16.34 µg/L. Since all effluent copper values were below the 19 µg/L IPBL, it is feasible for the WWTPs to comply with the IPBL.
- f. *Term of IPBL* The copper IPBL shall remain in force until March 31, 2008 or until the Board amends the limit based on additional data, site-specific objectives.

63. Lead

- a. *RPA Results* This Order establishes effluent limits for lead because the 6.5 µg/L maximum ambient background concentration exceeds the governing WQC of 4.8 µg/L, demonstrating reasonable potential by Trigger 2, above. The governing WQC is computed using CTR procedures. The attached Fact Sheet contains further details about the computation of the lead WQC.
- b. *WQBELs* The lead WQBELs calculated according to SIP procedures are 8.8 µg/L MDEL AMEL and 3.5 µg/L AMEL. These WQBELs are calculated without dilution.
- c. *Plant Performance and Attainability* Board staff statistically analyzed the effluent lead date for the period October 1999 through April 2004. The statistical analysis indicates the 99.87<sup>th</sup> percentile of recent plant performance is the same as the MEC, 3.0 µg/L. This value is below the 8.8 µg/L MDEL, and it is feasible for the WWTPs to comply with the WQBELs.

64. Mercury

- a. *RPA Results* This Order establishes limits for mercury because the 0.046 µg/L mercury MEC exceeds the governing WQO of 0.025 µg/L, demonstrating reasonable potential by Trigger 1, above. The governing WQO is based on the Basin Plan's 4-day average saltwater objective [Basin Plan Table 3-3, pg. 3-9].
- b. *WQBELs* The mercury WQBELs calculated according to SIP procedures are 0.039 µg/L MDEL and 0.021 µg/L AMEL. These WQBELs are calculated without dilution.
- c. *Immediate Compliance Infeasible* The feasibility study asserts the Discharger cannot immediately comply with the mercury WQBELs. Board staff statistically analyzed the



Discharger's effluent data from October 1999 through April 2004 and determined that the assertion of infeasibility is substantiated for mercury (see the attached Fact Sheet for detailed results of the statistical analysis).

- d. *IPBL* Due to the infeasibility of the Discharger immediately complying with the mercury WQBELs, this Order establishes a monthly average mercury IPBL of 0.087 µg/L. The 2001 mercury staff report identified two statistically derived IPBLs for mercury, 0.023 µg/L for advanced secondary treatment plants and 0.087 µg/L for secondary treatment plants. Since the Discharger operates secondary treatment plants, the appropriate mercury IPBL for its discharge is 0.087 µg/L, taken as a monthly average.
- e. *Interim Mercury Mass Emission Limit* In addition to the concentration-based mercury IPBL, this Order continues the existing permit's annual mercury mass loading limit of 0.655 kilograms per year (kg/yr) that the Board established in 1999 and the mass-based trigger of 0.020 kilograms per month (kg/mo) that the Board established in 2003. The mass-loading trigger is based on the 99.87<sup>th</sup> percentile of mercury mass loading data from December 1999 through November 2003, and the Board finds that a recalculation is not necessary as these data should be representative of current conditions. It requires additional actions if exceeded, as specified in Provision E.9. The attached Fact Sheet describes the mass limits' rationale and computation in greater detail.
- f. *Plant Performance and Attainability* During the period May 1999 through April 2004, the Discharger's combined effluent mercury concentrations ranged from 0.008 µg/L to 0.101 µg/L and averaged 0.021 µg/L. Although the mercury MEC exceeds the IPBL, Board staff's statistical evaluation of the Discharger's mercury data indicates that the concentration-based IPBL is attainable. During that same time period, the 12-month moving average mercury mass emissions ranged from 0.16 kg/yr (0.013 kg/mo) to 0.23 kg/yr (0.019 kg/mo). Based on these results, the annual average mass loading limit and trigger values should be attainable by the WWTPs. The attached Fact Sheet discusses these attainability evaluations in more detail.
- g. *Expected Final Mercury Limits* When the mercury TMDL is adopted, the final mercury WQBELs and the interim mass emission limitation will be revised to conform to the assigned WLAs. Until the TMDL is adopted, the Discharger will comply with the concentration- and mass-based IPBLs to cooperate in maintaining current ambient receiving water conditions.

65. Nickel

- a. *RPA Results* This Order establishes effluent limits for nickel because the 30 µg/L maximum ambient background concentration exceeds the governing WQC of 26.3 µg/L, demonstrating reasonable potential by Trigger 2, above. The governing WQC is computed using CTR procedures and a site-specific translator of 0.27. The attached Fact Sheet contains further details about the nickel site-specific translator and WQC computation.
- b. *WQBELs* The nickel WQBELs calculated according to SIP procedures are 32 µg/L MDEL and 21 µg/L AMEL. These WQBELs are calculated without dilution because this is a shallow-water discharge.

- c. *Plant Performance and Attainability* During the period October 1999 through April 2004, the 99.87<sup>th</sup> percentile of the WWTPs' effluent nickel performance was 6.0 µg/L, below the 32 µg/L AMEL. Therefore, it is feasible for the WWTPs to comply with the IPBL.

66. Cyanide

- a. *RPA Results.* This Order establishes cyanide WQBELs because the 7.3 µg/L cyanide MEC exceeds the 1 µg/L WQC, demonstrating reasonable potential by Trigger 1, above.
- b. *Cyanide Water Quality Criteria.* The NTR contains saltwater a Criterion Maximum Concentration (CMC) and a Criterion Chronic Concentration, both 1 µg/L, governing cyanide for the protection of aquatic life in marine waters. These CMC and CCC values are below the presently achievable reporting limits, currently ranging from about 3 to 5 µg/L.
- c. *WQBELs.* The cyanide WQBELs calculated according to SIP procedures are 1 µg/L MDEL and 0.61 µg/L AMEL.
- d. *Immediate Compliance Infeasible* The feasibility study asserts the Discharger cannot immediately comply with the cyanide WQBELs. The detected values of cyanide in the discharge ranged from 2.8 µg/L to 7.1 µg/L, all exceeding the MDEL. Therefore, the assertion of infeasibility is substantiated.
- e. *IPBL.* Since the Discharger cannot comply with the cyanide WQBELs, this Order establishes an IPBL for cyanide. The SIP specifies that the IPBL is the more stringent of the previous NPDES permit's limit or recent WWTP plant performance, unless antidegradation is satisfied. Statistical analysis of recent cyanide effluent data indicates a 99.87<sup>th</sup> percentile value of 9.2 µg/L. This Order establishes the 9.2 µg/L cyanide IPBL, taken as a daily maximum, even though it is higher than the previous NPDES Permit's 5µg/L limit, for the reasons outlined in the antidegradation discussion in section h., below. This limit is in compliance with antibacksliding for the reasons described in the findings above, as well as in compliance with antidegradation.
- f. *WWTP Performance and Attainability.* During the period November 1998 through December 2002, the MEC for cyanide was 7.3 µg/L. Board staff's evaluation of the subject discharge data indicates that it is feasible for the WWTP to comply with the 9.2 µg/L IPBL.
- g. *Term of IPBL.* The cyanide IPBL shall remain effective until January 31, 2010 or until the Board amends the limits based on additional data or cyanide SSOs.
- h. *Anti-degradation.* Anti-degradation is satisfied because the receiving waters are in attainment for cyanide, and the new IPBL is based on recent plant performance, so no increase in cyanide loading will result.
- i. *Participation in Ongoing Studies.* The Discharger has participated in regional discharger-funded studies to improve understanding of the relationship between chlorine dosage and cyanide formation, and for development of a cyanide SSO applicable to the receiving water. The collaborative cyanide study plan was submitted to the Board on October 29, 2001. The attached Fact Sheet describes these studies, their interim results, and strategies

for further studies in more detail. Provision E.4 requires the Discharger's continued participation in these collaborative studies.

- j. *Future cyanide RPA.* If detection limits improve such that the Discharger can measure cyanide levels at or below the WQCs, Board staff will conduct a revised RPA based on the new data. The Board may include a revised final limit based on the RPA and the study results in a future permit revision.

67. Dioxin TEQ.

- a. *RPA Results.* Dioxin TEQ monitoring show no detected values in the effluent, but the levels of detection are above the CTR criterion. The May 15, 2003, BACWA *San Francisco Bay Ambient Water Monitoring Interim Report* contains monitoring results from sampling events in 2002 and 2003 for priority pollutants not monitored by the RMP, including dioxin (the interim data). While these interim data were not used to evaluate for dioxin reasonable potential based on Trigger 2, above, they show elevated dioxin levels in San Francisco Bay at the Yerba Buena Island station. (Dioxin sampling and analysis was not performed at the San Pablo Bay RMP station). Based on these data and the 303(d) list's inclusion of dioxins and furans for San Pablo Bay, Board staff have determined that there is reasonable potential for dioxin under Trigger 3, above.
- b. *Dioxin Water Quality Criteria.* The CTR establishes a numeric human health WQC of 0.014 picograms per liter (pg/L, equal to 0.000001  $\mu\text{g/L}$ ) for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD), based on consumption of aquatic organisms.
  - i. The CTR preamble states that California NPDES permits should use toxicity equivalents (TEQs) where dioxin-like compounds have reasonable potential under narrative criteria. The preamble further states that the U.S. EPA intends to use the 1998 World Health Organization Toxicity Equivalence Factor scheme (WHO TEF) in the future, and encourages California to use it in State programs. The U.S. EPA intends to adopt revised water quality criteria guidance following their health reassessment of dioxin-like compounds.
  - ii. The 1998 WHO TEF scheme includes dioxin-like PCBs. Since the CTR's "Total PCBs" category already includes dioxin-like PCBs, including a specific standard for them, this Order's version of the TEF does not include dioxin-like PCBs. Board staff used TEQs to translate the narrative WQOs to numeric WQOs for the other 16 congeners.
  - iii. The final limits for dioxin TEQ will be based on the dioxin TMDL and applicable WLAs.
- c. *Dioxin Monitoring.* The detection limits historically used by the Discharger are insufficient to accurately determine the presence concentrations of dioxin congeners in its discharge. The SIP does not specify an ML for dioxin analysis. This Order requires additional dioxin monitoring to complement the Clean Estuary Project's special dioxin project, consisting of impairment assessment and a conceptual model for dioxin loading into the Bay.

68. 4,4'-DDE, 4,4'-DDD, Dieldrin, and Heptachlor Epoxide

- a. *RPA Results.* This Order establishes limits for 4,4'-DDE, 4,4'-DDD, dieldrin, and heptachlor epoxide because the ambient background concentrations of those pollutants, (0.001159 g/L, 0.001159 g/L, 0.000237 µg/L, and 0.000121 g/L, respectively) exceed the governing WQCs, demonstrating reasonable potential by Trigger 2, above.
- b. *Water Quality Criteria.* The CTR's governing WQCs for 4,4'-DDE, 4,4'-DDD, dieldrin, and heptachlor epoxide are the human health values of 0.00059 µg/L, 0.00084 µg/L, 0.00014 µg/L, and 0.00011 µg/L, respectively. These criteria are well below the MLs of 0.05 µg/L, 0.01 µg/L, and 0.01 µg/L, respectively identified in the SIP's Appendix 4.
- c. *WQBELs.* The WQBELs calculated according to SIP procedures are detailed in Table 3, below.

Table 3. Final and interim effluent limitations for 4,4'-DDE, 4,4'-DDD, dieldrin and heptachlor epoxide.

Pollutant	Final WQBELs		IPBLs, Monthly Average, µg/L*
	MDEL, µg/L	AMEL, µg/L	
4,4'-DDE	0.00059	0.00029	0.05
4,4'-DDD	0.00169	0.00084	0.05
Dieldrin	0.00029	0.00014	0.01
Heptachlor Epoxide	0.00022	0.00011	0.01

Footnote for Table 3:

\* IPBLs are taken as monthly averages.

- d. *Immediate Compliance Infeasible.* All effluent samples for 4,4'-DDE, 4,4'-DDD, dieldrin, and heptachlor epoxide were non-detect, with detection limits above the relevant WQCs. Therefore, it is infeasible for the Discharger to achieve immediate compliance. The Discharger will continue its existing pollution prevention efforts for these pollutants, as described in the feasibility study.
- e. *Interim Effluent Limitation.* The previous NPDES Permit does not contain effluent limits for 4,4'-DDE, 4,4'-DDD, dieldrin, or heptachlor epoxide. The SIP contains MLs for these compounds that are above the WQCs. The Discharger cannot accurately determine, and the Board cannot verify, compliance at levels below the MLs. Therefore, this Order sets the IPBLs at the lowest level at which the Discharger can demonstrate compliance, the individual MLs specified by the SIP, as depicted in Table 3, above.
- f. *WWTP Performance and Attainability.* None of these compounds was detected in samples collected from the WWTPs' effluent in the period October 1999 – April 2004. The lowest detection limits for those samples were all below the relevant MLs, indicating the Discharger can comply with the IPBLs.
- g. *Term of Interim Effluent Limits.* The 4,4'-DDE, 4,4'-DDD, dieldrin, and heptachlor epoxide interim effluent limits shall remain effective until January 31, 2010, or until the Board amends the limits based on additional data, SSOs, or the TMDL's WLAs.

- h. *Anti-backsliding/Anti-degradation.* Anti-backsliding and anti-degradation provisions do not apply to the IPBLs for these compounds because there were no WQBELs for them in the previous permit.

#### **Whole Effluent Acute Toxicity**

69. The whole-effluent acute toxicity limits contained in this Order are unchanged from the previous NPDES Permit. Compliance evaluation is based on 96-hour flow-through bioassays. All bioassays shall be performed according to the most current U.S. EPA approved method in 40 CFR 136, currently "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water, 5th Edition."

#### **Whole Effluent Chronic Toxicity**

70. This Permit includes the Basin Plan narrative toxicity objective as the applicable chronic toxicity effluent limit. The permit requirements for chronic toxicity are also consistent with the CTR and SIP requirements. The chronic toxicity monitoring requirements contained in this Permit are based on the Basin Plan narrative toxicity objective and BPJ, and consistent with U.S. EPA and State Board Task Force guidance, the CTR, and SIP requirements. They are implemented through monitoring and using numeric values as triggers to initiate accelerated monitoring and a chronic toxicity reduction evaluation (TRE) if needed.

#### **Bacteriological Limits**

71. This Order includes bacteriological effluent limits using enterococcus instead of the total coliform limits included in the previous NPDES Permit. These enterococcus limits are established subject to the Discharger performing, within one year of the effective date of this Permit, a study demonstrating that the enterococcus limits are fully protective of the water quality and beneficial uses of the receiving water. The requirement for this confirmatory study, and the consequences of not performing it, are further described in Effluent Limitations, below.

#### **Effluent and Receiving Water Pollutant Monitoring for the SIP**

72. Board finds that the effluent and ambient background monitoring data are insufficient to determine reasonable potential and calculate numeric WQBELs for some pollutants listed in the SIP.
73. The SIP states that each Board shall require major and minor POTWs and industrial dischargers in its region to conduct effluent monitoring for the 2,3,7,8-TCDD congeners whether or not an effluent limit is required for 2,3,7,8-TCDD. The monitoring is intended to assess the presence and amounts of the congeners being discharged to inland surface waters, enclosed bays, and estuaries. The State Board will use these monitoring data to develop strategies for a future approach to control these chemicals in multiple environmental media.
74. On August 6, 2001, the Board sent all the permitted dischargers a letter pursuant to Section 13267 of the California Water Code requiring the submittal of effluent and receiving water data on priority pollutants (the August 6, 2001 letter). This formal request for technical information addresses the insufficient effluent and ambient background data, and the dioxin study.

75. The Discharger has submitted workplans and sampling results for characterizing the levels of selected pollutants in the effluent and ambient receiving water pursuant to the August 6, 2001 letter.

#### **Self Monitoring Program**

76. The Self Monitoring Program (SMP) attached to this Order (included here by reference), requires monitoring at the individual WWTP outfalls (E-001 and E-002) for conventional pollutants, and at the combined outfall (E-003) for toxic pollutants, acute toxicity, and chronic toxicity. The SMP provides that sampling and analysis specified at E-003 may be physically collected at E-003, or may be reported as flow-weighted averages of the individual plants' results. The Board has determined that periodic performance monitoring is appropriate for major WWTPs like those operated by the Discharger. The SMP maintains the previous NPDES permit's TSS monitoring frequency of three (3) times per week as an effective and relatively inexpensive method to evaluate day-to-day performance. The SMP requires monthly monitoring during the discharge season for copper, lead, mercury, nickel, and cyanide to demonstrate compliance with effluent limits. The SMP also requires monitoring twice during each discharge season for 4,4-DDE, 4,4'-DDD, dieldrin, and heptachlor epoxide to demonstrate compliance with their IPBLs. The SMP also requires twice yearly monitoring for dioxins and furans using methods with lower detection limits. Until analytical methods improve and MLs are lowered, monitoring more frequently than twice yearly will not generate more useful data. Finally, the SMP requires the Discharger to conduct annual sampling pursuant to the requirements of the Board's August 6, 2001 letter requiring, under the authority of Section 13267 of the California Water Code, that the Discharger conduct further sampling to characterize select priority pollutants.

#### **Optional Mass Offset**

77. This Order contains requirements to prevent further degradation of the receiving water, including interim mass limits based on WWTP performance, provisions for aggressive source control, feasibility studies for wastewater reclamation, and WWTP optimization. After implementing these efforts, the Discharger may find that further net reductions of its total mass loadings of the 303(d)-listed pollutants to the receiving water can only be achieved through a mass offset program. This Order includes an optional provision for a mass offset program.

#### **NPDES Permit, Notification and Public Hearing**

78. *NPDES Permit.* This Order serves as an NPDES Permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code [California Environmental Quality Act (CEQA)] pursuant to Section 13389 of the California Water Code.
79. *Notification.* The Discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided an opportunity to submit their written views and recommendations. Board staff prepared a Fact Sheet and Response to Comments, which are hereby incorporated by reference as part of this Order.

80. *Public Hearing.* The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

**IT IS HEREBY ORDERED**, pursuant to the provisions of Division 7 of the California Water Code, regulations, and plans and policies adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the Discharger shall comply with the following:

#### **A. DISCHARGE PROHIBITIONS**

1. Discharge of wastewater at any point where it does not receive a minimum initial dilution of 10:1, or into dead-end slough and similar confined waters is prohibited, except as specified here. Based on findings above, an exception to this Prohibition is granted for the discharge of treated effluent during the period from September 1 through May 31 annually, provided the Discharger continues to work to reuse the maximum feasible amount of treated wastewater and to minimize discharges to San Pablo Bay. Discharge of treated wastewater at a location or in a manner different than that described in the findings of this Order is prohibited.
2. The bypass or overflow of untreated or partially treated wastewater to waters of the State, at the WWTPs, is prohibited, except as provided for bypasses under the conditions stated in 40 CFR 122.41(m)(4) and in Provision A.13.

The discharge of blended wastewater, that is biologically treated wastewater blended with wastewater that have been diverted around biological treatment units or advanced treatment units, is allowable only 1) during wet weather, and 2) when the discharge complies with the effluent and receiving water limitations contained in this Order. Furthermore, the Discharger shall operate the facility as designed and in accordance with the Operation and Maintenance Manuals developed for the facility. This means that the Discharger shall optimize storage and use of equalization units, and shall fully utilize the biological treatment units, and advanced treatment units if applicable. The Discharger shall report these incidents of blended effluent discharges in routine monitoring reports, and shall conduct monitoring of this discharge as specified elsewhere in this Order.

3. The average dry weather flow discharge shall not exceed 6.55 MGD, apportioned as follows: Novato Plant 4.53 MGD, Ignacio Plant 2.02 MGD. The average dry weather flow shall be determined over three consecutive dry weather months each year.
4. Discharge to San Pablo Bay is prohibited during the dry weather period from June 1 through August 31, unless it is pursuant to a specific request made by the Discharger and approved by the Executive Officer. This request may be submitted by telephone or in writing, and must fully explain the need for discharges during this period (e.g., high flows related to late spring or early fall storm events or, when reclamation is not feasible).
5. The discharge of untreated or partially treated wastewater from the collection system or pump stations to any surface water stream, natural or man-made, or to any drainage system intended to convey storm water runoff to surface waters, is prohibited. The discharge of chlorine, or any other toxic substance used for disinfection and cleanup of wastewater spills, to any surface water body is prohibited.

## B. EFFLUENT LIMITS

The term "effluent" in the following limits means the fully treated wastewater effluent from the Discharger's wastewater treatment facilities, as discharged to San Pablo Bay. The effluent discharged to San Pablo Bay shall not exceed the following limits:

1. a. The effluent from the Ignacio plant (E-001) and the Novato plant (E-002), monitored separately and individually, and discharged through a common outfall to San Pablo Bay between November 1 and April 30, annually, shall not exceed the limits depicted in Table 4, below:

Table 4. Conventional Pollutant Effluent Limitations for Wet Weather Discharge (November 1 through April 30)

<i>Constituent</i>	<i>Units</i>	<i>Monthly Average</i>	<i>Weekly Average</i>	<i>Daily Maximum</i>
Biochemical Oxygen Demand (BOD <sub>5</sub> , 20°C)	mg/L	30	45	--
Total Suspended Solids	mg/L	30	45	--
Oil & Grease	mg/L	10	--	20

- b. When discharge occurs between May 1 and October 31, annually, the effluent limits depicted in Table 5, below, apply to effluent from the Ignacio plant (E-001) and the Novato plant (E-002), monitored separately and individually, with the exception described in 1.c.:

Table 5. Conventional Pollutant Effluent Limitations for Dry Weather Discharge (between May 1 and October 31).

<i>Constituent</i>	<i>Units</i>	<i>Monthly Average</i>	<i>Weekly Average</i>	<i>Daily Maximum</i>
Biochemical Oxygen Demand (BOD <sub>5</sub> , 20°C)	mg/L	15	30	- -
Oil and Grease	mg/L	5	--	15
Total Suspended Solids	mg/l	10	20	- -

- c. Between May 1 and October 31, annually, the interim conventional effluent limits depicted in Table 6, below, apply to E-001 separately, when discharge occurs. After March 31, 2008, the BOD and TSS limits for E-001 will be those listed in Table 5, above. The Discharger must comply with the conditions of Provision E.11, below, to continue to receive the interim conventional effluent limits for BOD and TSS.

Table 6. Interim Performance Based Conventional Pollutants Effluent Limitations for Discharges from Ignacio Treatment Plant (E-001) between May 1 and October 31, annually.



Constituent	Units	Interim limits ending March 31, 2008.		
		Monthly Average	Weekly Average	Daily Maximum
Biochemical Oxygen Demand (BOD <sub>5</sub> , 20°C)	mg/L	22	--	44
Total Suspended Solids	mg/L	23	--	46

2. The subject discharge shall not have pH of less than 6.5 nor greater than 8.5. If the Discharger monitors pH continuously, the Discharger shall be in compliance with the pH limitation provided that both of the following conditions are satisfied: (i) The total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and (ii) No individual excursion from the range of pH values shall exceed 60 minutes.
3. Bacteriological Limits:
  - a. Treated wastewater from each WWTP, considered individually (E-001 and E-002) shall meet the following bacteriological limits at some point in the treatment process prior to discharge to San Pablo Bay through E-003:
    - i. 30-day geometric mean of less than 35 enterococcus MPN per 100mL; and
    - ii. No single effluent sample exceeding 276 MPN per 100mL, as verified by a follow-up sample taken within 24 hours.
  - b. Within one year of the effective date of this Permit, the Discharger will propose and perform, upon the Executive Officer's approval, a study demonstrating that the enterococcus limits are fully protective of the water quality and beneficial uses of the receiving water. If this confirmatory study is not performed by one year from the effective date of this Permit, or if it indicates the enterococcus limits are not fully protective of the water quality and beneficial uses of the receiving water, then the previous NPDES permit's total coliform-based bacteriological limits will be reapplied.
4. *85 Percent Removal* The arithmetic mean of the biochemical oxygen demand (BOD<sub>5</sub>, 20°C) and total suspended solids values (TSS), by concentration, for effluent samples collected in each calendar month shall not exceed 15 percent of the arithmetic mean of the respective values, by concentration, for influent samples collected at approximately the same times during the same period for each of the two treatment plants measured separately (85 per cent removal). This 85 per cent removal standard applies to each treatment plant individually (E-001 and E-002).
5. *Chlorine Residual*: The effluent discharged from E-003 shall not contain a chlorine residual concentration greater than 0.0 mg/l at any time except during the non-discharge season when effluent is discharged to the reclamation storage ponds. This concentration requirement is defined as below the limit of detection in standard test methods defined in the latest edition of *Standard Methods for the Examination of Water and Wastewater*. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine and sodium bisulfite dosage (including a safety factor) and concentration to demonstrate that chlorine residual exceedences are false positives. If adequate evidence is provided, Board staff will

conclude that these false positive chlorine residual exceedences are not violations of this permit limit.

6. *Ammonia* The ammonia in the combined effluent shall not exceed 6.0 mg/L as a monthly average.

#### **Toxicity Testing**

##### **7. Whole Effluent Acute Toxicity:**

- a. Representative samples of the subject discharge (E-003) shall meet the following limits for acute toxicity. Bioassays shall be conducted in compliance with Provision E.6.
  - i. The survival of bioassay test organisms in 96-hour bioassays of undiluted effluent shall be:
    - a) An eleven (11)-sample median value of not less than 90 percent survival; and
    - b) An eleven (11)-sample 90th percentile value of not less than 70 percent survival.
- b. These acute toxicity limits are further defined as follows:
  - i. *11-sample median limit:* Any bioassay test showing survival of 90 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit, if five or more of the past ten or fewer bioassay tests also show less than 90 percent survival.
  - ii. *90th percentile limit:* Any bioassay test showing survival of 70 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit, if one or more of the past ten or fewer bioassay tests also show less than 70 percent survival.
- c. Bioassays shall be performed using the most up-to-date U.S. EPA protocol and the most sensitive species as specified in writing by the Executive Officer based on the most recent screening test results. Bioassays shall be conducted in compliance with "Methods for Measuring The Acute Toxicity of Effluents and Receiving Water To Freshwater and Marine Organisms", currently 5th Edition (EPA-821-R-02-012), with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP) upon the Discharger's request with justification. The Discharger shall implement future updated methods within the shortest time practicable.

##### **8. Chronic Toxicity**

- a. Representative samples of the subject discharge (E-003) shall meet the following requirements for chronic toxicity. Compliance with the Basin Plan narrative chronic toxicity objective shall be demonstrated according to tiered requirements specified in Provision F.8, below.

### Toxic Substances

9. The discharge of combined effluent (E-003) containing constituents in excess of the following limitations is prohibited:

Table 7. Effluent limitations for toxic substances in combined effluent.

Constituent <sup>[1]</sup>	Unit	MDEL <sup>[4]</sup>	AMEL <sup>[4]</sup>	Interim Monthly Average <sup>[4]</sup>	Interim Daily Maximum <sup>[4]</sup>	Compliance Deadline for MDEL and AMEL
Copper	µg/L	6.4	4.4	--	19	3/31/2008
Lead	µg/L	8.8	3.5	--	--	--
Mercury <sup>[2]</sup>	µg/L	--	--	0.087		3/31/2010
Nickel	µg/L	32	21	--	--	--
Cyanide <sup>[3]</sup>	µg/L	--	--	--	9.2	1/31/2010
4,4'-DDE	µg/L	--	--	--	0.05	1/31/2010
4'4'-DDD	µg/L	--	--	--	0.05	1/31/2010
Dieldrin	µg/L	--	--	--	0.01	1/31/2010
Heptachlor Epoxide	µg/L	--	--	--	0.01	1/31/2010

#### Footnotes for Table 7:

- [1] (a) Compliance with these limits is intended to be achieved through wastewater treatment and, as necessary, pretreatment and source control.
- (b) All analyses shall be performed using current U.S. EPA methods, or equivalent methods approved in writing by the Executive Officer
- (c) Limits apply to the average concentration of all samples collected during the averaging period (Daily = 24-hour period; Monthly = calendar month).
- [2] Effluent mercury monitoring shall be performed using ultraclean sampling and analysis techniques to the maximum extent practicable.
- [3] Cyanide: Compliance may be demonstrated by measurement of weak acid dissociable cyanide, EPA Method 335.2, or EPA Method OIA 1677.
- [4] Daily maximum or average monthly sample results for individual constituents shall be considered non-compliance with the relevant effluent limits only if they exceed both the effluent limitation and the ML for that constituent, as depicted in Table 4, of the attached Self Monitoring Program.

### 10. Mercury Mass Limit and Mass Trigger

The Discharger shall demonstrate that the current mercury mass loading to the receiving water does not increase by complying with the following annual mass load and monthly mass trigger.

The attached Fact Sheet describes the calculation of the annual mass load and monthly trigger in more detail.

- a. The 12-month moving average annual load for mercury shall not exceed **0.655 kg/year**. Compliance shall be calculated using moving average flows and concentrations for the entire year (during both discharge and reclamation months).
- b. If the 12-month moving average monthly mass loading for mercury exceeds the trigger value of **0.020 kg/month**, the Discharger shall initiate the actions specified in Provision E.9. This trigger value is based on discharge season data only.
- c. Compliance determinations for annual mass limit and monthly mass trigger shall use the following computations:

$$\text{Annual Mass Emission, kg / year} = \sum (\text{Monthly Mass Emission Rates, kg / month})$$

where

$$\text{Monthly Mass Emission, kg / month} = 0.003785 * \left( \frac{\sum_{i=1}^n C_i}{n} \right) * (\text{Total Monthly Flow, Millions of Gallons})$$

and where:

n = number of samples collected per month;  
C<sub>i</sub> = Mercury sample concentrations, µg/L.  
0.003785 = conversion factor, for converting (concentration)·(flow) into kilograms per day (kg/day)

- d. The Discharger shall include a table presenting cumulative total mass loadings for the previous 12 months with each monthly Self-Monitoring Report. Compliance for each month will be determined based on the 12-month moving averages over the previous 12 months of monitoring calculated using the method described in section B.10.c above. The Discharger may use monitoring data collected under accelerated schedules (i.e., special studies) to determine compliance.
- e. The mercury TMDL and WLAs will supersede this interim mass emission limitation once the Board implements them.

### C. RECEIVING WATER LIMITS

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:
  - a. Floating, suspended, or deposited macroscopic particulate matter or foam;
  - b. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;

- c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
  - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin; and/or
  - e. Toxic or other deleterious substances to be present in concentrations or quantities that cause exceedence of the narrative toxicity objective contained in the Basin Plan.
2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State any one place within one foot of the water surface:

- a. Dissolved Oxygen: 5.0 mg/L, minimum

The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, then the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.

- b. Dissolved Sulfide: 0.1 mg/L, maximum

- c. pH: Variation from normal ambient pH by more than 0.5 pH units.

- d. Un-ionized Ammonia: 0.025 mg/L as N, annual median

0.16 mg/L as N, max.

- e. Nutrients: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

3. The discharge shall not cause a violation of any particular water quality standard for receiving waters adopted by the Board or the SWRCB as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board may revise and modify this Order in accordance with such more stringent standards.

#### **D. BIOSOLIDS/SLUDGE REQUIREMENTS**

1. All sludge treatment, processing, storage or disposal activities under the Discharger's control shall be in compliance with current state and federal regulations.
2. Sludge shall not be applied to the dedicated disposal site between October 30 and May 1 unless prior written authorization is obtained from the Executive Officer.
3. Sewage sludge disposed of at the storage lagoons and dedicated disposal site shall be limited to digested sewage sludge generated by the Discharger and sludge from NMWD's water treatment facility unless an exception is authorized by the Executive Officer.

4. Disposal of sludge in the dedicated disposal site shall not adversely impact beneficial uses of the groundwater or Novato Creek.
5. The Discharger shall notify the Board, in writing, of any significant changes in its sludge disposal practices.
6. The treatment, processing, storage or disposal of sludge conducted by the Discharger shall not create a condition of pollution or nuisance as defined in Section 13050 (l) and (m) of the California Water Code.
7. The treatment, processing, storage or disposal of sludge by the Discharger shall not cause waste material to be discharged to, or deposited in, waters of the State. Pooled water or runoff from the disposal area shall not be discharged to adjacent land or ditches discharging to surface waters. Sludge storage facilities shall be operated and maintained in such a manner as to provide adequate protection from surface runoff, erosion, or other conditions, which would cause drainage from the waste materials to escape from the storage facility site(s).
8. Disposal of municipal wastewater solids by surface disposal and operation of a surface disposal site are regulated by the U.S. EPA under the 40 CFR 503 regulations (Standards for The Use or Disposal of Sewage Sludge). Waste discharge requirements for sludge disposal are waived under the condition that the Discharger complies with all provisions of 40 CFR Part 503. As required by Water Code Section 13269, the finding is made that this waiver is not against the public interest, as the activity is adequately regulated by the Federal regulations at 40 CFR Part 503.
9. The Discharger is required to submit an annual report to the U.S. EPA regarding its sewage sludge disposal practices in accordance with the requirements of 40 CFR 503. The Discharger shall submit a copy of this report to the Board by February 28 of the following year.

## **E. PROVISIONS**

### **1. Permit Compliance and Rescission of Previous Waste Discharge Requirements**

The Discharger shall comply with all sections of this Order beginning on the effective date of this NPDES Permit. Requirements prescribed by this Order supersede the requirements prescribed by Order No. 99-036 and Order No. R2-2003-002. Order No. 99-036 and Order No. R2-2003-002 are hereby rescinded upon the effective date of this Order.

### **2. Copper Study and Schedule - Regional Site-Specific Objective Study for Copper**

The Discharger shall continue its participation in the regional discharger-funded effort to develop site-specific saltwater aquatic life-based WQOs for copper in San Francisco Bay north of the Dumbarton Bridge, as described in the copper findings, above. The Discharger shall also participate in the development of Copper Action Plans, acceptable to the Executive Officer, designed to ensure that copper concentrations will not increase unacceptably in the receiving water as a result of controllable discharges. The Action Plans will describe baseline actions for wastewater and storm water dischargers and a program of additional monitoring and actions to be taken by those dischargers, triggered by specified increases in ambient copper concentrations.

### 3. Cyanide Compliance Schedule and Cyanide SSO Study

The Discharger shall comply with the following tasks and deadlines:

Tasks	Compliance Date
a. <i>Compliance Schedule.</i> The Discharger should track relevant national studies, and participate in regional studies as described in the cyanide findings. The Discharger shall also investigate the relationship between cyanide formation and chlorine dose, as chlorine dosage is reduced under this permit's new bacterial limits. Results from these studies should enable the Board to determine feasibility of compliance with final WQBELS during the next permit reissuance.	Annual progress reports with the first report due November 1, 2005
b. <i>SSO Study.</i> The Discharger shall actively participate in the development of regional SSOs for cyanide.	Annual progress reports by cyanide work group.
c. Conduct evaluation of compliance attainability with appropriate final limitations.	February 1, 2007

### 4. Pollutant Prevention and Minimization Program (PMP)

- a. The Discharger shall continue to conduct and improve its existing Pollution Prevention Program to reduce loadings of pollutants such as copper, mercury, cyanide, 4,4'-DDE, 4,4'-DDD, dieldrin, and heptachlor epoxide to the WWTPs and therefore to the receiving waters.
- b. The Discharger shall submit an annual report, acceptable to the Executive Officer, no later than February 28th of each year. Annual reports shall cover January through December of the preceding year. Annual reports shall include at least the following information:
  - i. A brief description of its WWTPs, WWTP processes and service area.
  - ii. A discussion of the current pollutants of concern. Periodically, the Discharger shall identify which pollutants are currently a problem or which may be potential future problems, and shall include the reasons why the pollutants were chosen.
  - iii. A discussion of how the Discharger intends to estimate and identify sources of the pollutants. The Discharger shall also identify sources or potential sources not directly within the ability or authority of the Discharger to control such as pollutants in the potable water supply and air deposition.
  - iv. A discussion and prioritization of tasks to address the Discharger's pollutants of concern. The Discharger may implement tasks itself or participate in group, regional, or national tasks that will address its pollutants of concern. Identified tasks shall include timelines for implementing each one. The Discharger is strongly encouraged

to participate in group, regional, or national tasks that will address its pollutants of concern whenever it is efficient and appropriate to do so..

- v. Discussion of the Discharger's outreach efforts to employees. The Discharger shall inform employees about the pollutants of concerns, potential sources, and how they might be able to help reduce the discharge of pollutants of concern into the WWTP. The Discharger may provide a forum for employees to provide input to the Program.
  - vi. Description of the Discharger's continued public outreach program to communicate pollution prevention to its service area. Outreach may include participation in existing community events such as county fairs, initiating new community events such as displays and contests during Pollution Prevention Week, conducting school outreach program, conducting WWTP tours, and providing public information in newspaper articles or advertisements, radio, television stories or spots, newsletters, utility bill inserts, and web site. Information shall be specific to the target audiences. The Discharger shall coordinate with other agencies as appropriate.
  - vii. Discussion of criteria used to measure the Program's and tasks' effectiveness, including establishing criteria to evaluate the effectiveness of its Pollution Prevention Program. This shall also include a discussion of the specific criteria used to measure the effectiveness of each of the tasks in item b. (iv), b. (v), and b. (vi).
  - viii. Documentation of efforts and progress detailing all of the Discharger's activities in the Pollution Prevention Program during the reporting year.
  - ix. Evaluation of Program's and tasks' effectiveness, using the criteria established in b. (vii) to evaluate the Program's and tasks' effectiveness.
  - x. Identification of specific tasks and time schedules for future efforts, detailing how it intends to continue or change its tasks to more effectively reduce the amount of pollutants to the WWTP, and subsequently in its effluent.
- c. According to Section 2.4.5 of the SIP, when there is evidence that a priority pollutant is present in the effluent above an effluent limitation and either:
- i. A sample result is reported as detected, but not quantified (less than the Minimum Level) and the effluent limitation is less than the reported Minimum Level,
  - ii. A sample result is reported as not detected (less than the Method Detection Limit) and the effluent limitation is less than the Method Detection Limit; or,
  - iii. The dioxin TEQ exceeds the WQO (0.014 pg/L); then

the Discharger shall expand its existing Pollution Prevention Program to include the reportable priority pollutant. A priority pollutant becomes a reportable priority pollutant when (1) there is evidence that it is present in the effluent above an effluent limitation and either (c)(i), c(ii), or (c) (iii) is triggered or (2) if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported Minimum Level.



- d. If triggered by the reasons in c. above, and notified by the Executive Officer, the Discharger's Pollution Prevention Program shall, within 6 months, also include:
  - i. An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling, or alternative measures approved by the Executive Officer when it is demonstrated that source monitoring is unlikely to produce useful analytical data;
  - ii. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system, or alternative measures approved by the Executive Officer when it is demonstrated that influent monitoring is unlikely to produce useful analytical data;
  - iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;
  - iv. Development of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and
  - v. An annual status report that shall be sent to the Board including:
    - a) All Pollution Prevention monitoring results for the previous year;
    - b) A list of potential sources of the reportable priority pollutant(s);
    - c) A summary of all actions undertaken pursuant to the control strategy; and
    - d) A description of actions to be taken in the following year.
  - vi. To the extent that the requirements of the Pollution Prevention Program and the Pollutant Minimization Program overlap, the Discharger is allowed to continue, modify, or expand its existing Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.
  - vii. These Pollution Prevention/Pollutant Minimization Program requirements are not intended to fulfill the requirements in The Clean Water Enforcement and Pollution Prevention Act of 1999 (Senate Bill 709).

## **5. Pretreatment**

- a. Pretreatment Program: The Discharger shall implement and enforce its approved pretreatment program in accordance with Federal Pretreatment Regulations (40 CFR 403), pretreatment standards promulgated under Section 307(b), 307(c), and 307(d) of the Clean Water Act, pretreatment requirements specified under 40 CFR 122.44(j), and the requirements in Attachment H, "Pretreatment Requirements." The Discharger's responsibilities include, but are not limited to:
  - i) Enforcement of National Pretreatment Standards in accordance with 40 CFR 403.5 and 403.6;

- ii) Implementation of its pretreatment program in accordance with legal authorities, policies, procedures and financial provisions described in the General Pretreatment regulations (40 CFR 403) and the Discharger's approved pretreatment program;
  - iii) Submission of reports to, the State Board and the Board, as described in Attachment E, "Pretreatment Requirements;"
  - iv) Evaluate the need to revise local limits under 40 CFR 403.5(c)(1); and within 180 days after the effective date of this Order, submit a report acceptable to the Executive Officer describing the changes with a plan and schedule for implementation.
- b. The Discharger shall implement its approved pretreatment program and the program shall be an enforceable condition of this permit. If the Discharger fails to perform the pretreatment functions, the Board, the State Water Resources Control Board, or the U.S. EPA may take enforcement actions against the Discharger as authorized by the Clean Water Act.

#### **6. Whole Effluent Acute Toxicity**

The Discharger shall maintain compliance with acute toxicity requirements contained in this Order in accordance with the following:

- a. Determining compliance by measuring survival of test organisms exposed to 96-hour continuous flow-through bioassays. Test organisms shall be fathead minnows unless specified otherwise in writing by the Executive Officer.
- b. All bioassays shall be performed according to the most up-to-date protocols in 40 CFR Part 136, "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms," currently in its 5th Edition. Upon the Discharger's request with justification, exceptions may be granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP). The Discharger shall comply with future updates as soon as practicable after their adoption.

#### **7. Whole Effluent Chronic Toxicity**

The Discharger shall monitor and evaluate the effluent from the treatment plant for chronic toxicity in order to demonstrate compliance with the Basin Plan narrative toxicity objective. Compliance with this requirement shall be demonstrated by the following.

- a. The Discharger shall conduct routine chronic toxicity monitoring in accordance with the SMP of this Order.
- b. If data from routine monitoring exceed either of the following evaluation parameters, then the Discharger shall conduct accelerated chronic toxicity monitoring. Accelerated monitoring shall consist of monitoring at frequency intervals of one half the interval given for routine monitoring in the SMP of this Order.
- c. Chronic toxicity evaluation parameters:
  - i. A three sample median value of 1 TUc; and

- ii. A single sample maximum value of 2 TU<sub>c</sub>.
- iii. These parameters are defined as follows:
  - a) Three-sample median: A test sample showing chronic toxicity greater than 1 TU<sub>c</sub> represents an exceedence of this parameter, if one of the past two or fewer tests also show chronic toxicity greater than 1 TU<sub>c</sub>.
  - b) TU<sub>c</sub> (chronic toxicity unit): A TU<sub>c</sub> equals 100/NOEL (e.g., If NOEL = 100, then toxicity = 1 TU<sub>c</sub>). NOEL is the no observed effect level determined from IC, EC, or NOEC values.
  - c) The IC, EC, NOEL and NOEC, values and their use are defined in Attachment A of the Self-Monitoring Program (SMP).
- d. If data from accelerated monitoring tests are found to be in compliance with the evaluation parameters, then routine monitoring shall be resumed.
- e. If accelerated monitoring tests continue to exceed either evaluation parameter, then the Discharger shall initiate a chronic toxicity reduction evaluation (TRE).
- f. The TRE shall be conducted in accordance with the following:
  - i. The Discharger shall submit a TRE workplan acceptable to the Executive Officer. The Board encourages the Discharger to prepare a generic TRE workplan and keep it on hand should it be needed for a toxicity event. The workplan shall be reviewed and updated as necessary in order to remain current and applicable to the subject discharge and discharge facilities.
  - ii. The TRE shall be initiated within 30 days of the date of completion of the accelerated monitoring test observed to exceed either evaluation parameter.
  - iii. The TRE shall be conducted in accordance with the approved workplan, as it may be amended by the Executive Officer.
  - iv. The TRE needs to be specific to the subject discharge and Discharger facility, and may be in accordance with current technical guidance and reference materials including U.S. EPA guidance materials. TRE should be conducted as a tiered evaluation process, such as summarized below:
    - a) Tier 1 consists of basic data collection (routine and accelerated monitoring).
    - b) Tier 2 consists of evaluation of optimization of the treatment process including operation practices, and in-plant process chemicals.
    - c) Tier 3 consists of a toxicity identification evaluation (TIE).
    - d) Tier 4 consists of evaluation of options for additional effluent treatment processes.

- e) Tier 5 consists of evaluation of options for modifications of in-plant treatment processes.
- f) Tier 6 consists of implementation of selected toxicity control measures, and follow-up monitoring and confirmation of implementation success.
- v. The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity.
- vi. The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity. All reasonable efforts using currently available TIE methodologies should be employed.
- vii. As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the source(s) and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with chronic toxicity evaluation parameters.
- viii. Many recommended TRE elements parallel required or recommended efforts of source control, pollution prevention and storm water control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements or recommended efforts of such programs may be acceptable to comply with TRE requirements.
- ix. The Board recognizes that chronic toxicity may be episodic and identification of causes of and reduction of sources of chronic toxicity may not be successful in all cases. Consideration of enforcement action by the Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.
- g. Chronic Toxicity Monitoring Screening Phase Requirements, Critical Life Stage Toxicity Tests and definitions of terms used in the chronic toxicity monitoring are identified in Attachment A of the SMP. The Discharger shall comply with these requirements as applicable to the discharge.

## **8. Mercury Mass Loading Reduction**

If mass loading for mercury exceeds the trigger level specified in Effluent Limit B.10 of this Order, then the following actions shall be initiated and subsequent reports shall include but not be limited to the following:

- a. *Notification.* Any exceedence of the trigger specified in Effluent Limitation B.10.b. shall be reported to the Board in accordance with Section E.6.b. in the Standard Provisions and Reporting Requirements (August, 1993).
- b. *Identification of the problem.* Immediately resample to verify the increase in loading. If resampling confirms that the mass loading trigger has been exceeded, determine whether the exceedence is flow or concentration-related. If the exceedence is flow-related, identify whether it is related to changes in reclamation, increase in the number of sewer connections, increases in infiltration and inflow (I/I), wet weather conditions or unknown

sources. If the exceedence is concentration-related, identify whether it is related to industrial, commercial, residential or unknown sources.

- c. *Investigation of corrective action.* Investigate the feasibility of the following actions:

- (1) Reducing inflow and infiltration (I/I)
- (2) Increasing reclamation

Within 60 days after confirmed exceedence of trigger, develop a plan and include time schedule as short as practicable, and acceptable to the Executive Officer to implement all reasonable actions to maintain mercury mass loadings at or below the mass loading trigger contained in Effluent Limitation B.10.b.

- d. *Investigation of aggressive prevention/reduction measures.* In the event the exceedence is related to growth and the plan required under (c) above is not expected to keep mercury loads below the mass load trigger, the Discharger shall submit a plan, acceptable to the Executive Officer, including, but not limited to, an initiative to work with the local planning department to investigate the feasibility and potential benefits of requiring water conservation, reclamation, and dual plumbing for new development. This plan should be implemented as soon as practicable.

## 9. Bacteriological Studies

The Discharger shall propose a confirmation study to be implemented upon approval by the Executive Officer. The confirmation study shall demonstrate that:

- a. the enterococcus limits included in this Order are protective of the designated uses of the receiving water, and
- b. the receiving water adjacent to the combined discharge (E-003) is consistent with the U.S. EPA water contact scenario of "lightly used area," specifically including water quality data.

Upon approval by the Executive Officer, the Discharger shall implement the confirmation study and report its results not later than 1 year from the Executive Officer's approval.

## 10. Reclamation pond operation

During the wet weather discharge period (November 1 through April 30), treated wastewater from the storage ponds may be discharged directly through the combined outfall, if it meets the requirements of the Discharger's Reclamation Pond Wet Season discharge Sediment Control and Monitoring Plan.

Water held in the reclamation ponds before being discharged through the combined outfall during the dry weather discharge months (May, September, and October) may be discharged if it meets all the requirements in this Order. Pre-discharge monitoring of water held in the reclamation ponds is required during the dry weather discharge period (May 1 – 31 and September 1 – October 31, annually).

**11. Compliance schedule for conventional effluent limitations at Ignacio Plant**

The Discharger shall submit semiannual progress reports on its attainment of the tasks and time schedule described in Attachment G for the Ignacio plant attaining compliance with the final technology-based effluent limits for Biochemical Oxygen Demand (BOD<sub>5</sub>, 20°C) and Total Suspended Solids (TSS) by March 31, 2008. The reports shall be received by the Executive officer by January 31 and July 31, annually. Besides the semiannual reports, the Discharger shall notify the Executive Officer in writing within 30 days of any suspension or redirection of its strategic plan.

**12. 303(d)-listed Pollutants Site-Specific Objective and TMDL Status Review**

The Discharger shall participate in the development of TMDLs or site-specific objectives for copper, mercury, 4,4'-DDE, 4,4'-DDD, and dieldrin. By January 31 of each year, the Discharger shall submit an update to the Board to document its participation efforts toward development of the TMDL(s) or site-specific objective(s). The Discharger may meet this update requirement by continuing its participation in BACWA's cooperative efforts to accelerate development of Water Quality Attainment Strategies, as described in findings, above. However, should BACWA not submit its required progress reports on time, then the Discharger will remain responsible for the annual progress update. This Order may be reopened in the future to reflect any changes required by TMDL development.

**13. Optional Mass Offset**

The Discharger may submit to the Board, for approval, a mass offset plan to reduce 303(d)-listed pollutants to the same watershed or drainage basin. The Board may modify this Order to allow an approved mass offset program.

**14. Sanitary Sewer Management Plan**

The Discharger shall fully participate in BACWA's collaborative program to develop guidelines for sanitary sewer management plans (SSMPs). The Discharger shall develop and implement a Discharger-specific SSMP, acceptable to the Executive Officer, as quickly as feasible once BACWA's guidance is available. As part of its SSMP, the Discharger shall report sanitary sewer overflows (SSOs) electronically as soon as the Board's electronic SSO reporting system is available, even if that capability precedes the development of the Discharger's SSMP.

### 15. Blending Monitoring Study

The Discharger shall comply with the following tasks and deadlines:

Tasks	Compliance Date
a. <i>Blending Study Plan.</i> The Discharger shall propose a study plan, acceptable to the Executive Officer. The study plan shall propose monitoring effluent for the purpose of demonstrating that TSS is an appropriate indicator of compliance with other effluent limitations during blending events.	6 months following effective date of permit
b. <i>Blending Final Report.</i> The Discharger shall submit a report, acceptable to the Executive Officer. The report shall include an analysis of TSS as an indicator of compliance with effluent limitations, and a recommendation for a TSS trigger value. The purpose of the TSS trigger is for use in triggering additional monitoring (Table 2 and Table 3 of the SMP) during blending events.	June 30, 2006

### 16. Implementation and Enforcement of Prohibition A.5

- a. *Enforcement consideration.* In any enforcement action, the Board will consider the Discharger's efforts in containing, controlling, and cleaning up SSOs. The Board will also consider the Discharger's efforts in sewer rehabilitation. These considerations are part of the factors required by Section 13327 of the California Water Code.

The Discharger shall make every practicable effort to contain SSOs and to prevent the wastewater from entering storm drains and surface water bodies.

Prohibition A.5. is not violated under either of the following:

- i. If the SSO does not enter a storm drain or surface water body, or
- ii. If the Discharger contains the SSO within the storm drain system pipes, and fully recovers and cleans up the spilled wastewater.

However these incidents of SSOs shall be reported to the Board as SSOs as stipulated in SMP Section V.7.

- b. *Discharges caused by severe natural conditions.* The Board may take enforcement action against the Discharger for any sanitary sewer system discharge caused by natural conditions, unless the Discharger demonstrates through properly signed, contemporaneous operating logs, or other relevant evidence that,

- i. The discharge was caused by severe natural conditions (such as hurricanes, tornadoes, flooding, earthquakes, landslides, tsunamis, and other similar natural conditions);
  - ii. There were no feasible alternatives for the discharge, such as retention of untreated wastewater, reduction of inflow and infiltration, and use of adequate backup equipment;
  - iii. The Discharger submitted a claim to the Board's staff within 10 working days of the date of the discharge that the discharge meets the conditions of this provision. Additional information to substantiate such claim shall be submitted upon request of the Board staff; and
  - iv. The Discharger took all reasonable steps to stop, and mitigate the impact of the discharge within 24 hours after the Discharger became aware of the SSO.
- c. *Discharges caused by other factors.* For SSOs other than those covered under this section, the Discharger may establish an affirmative defense to an action brought for noncompliance if the Discharger demonstrates through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - i. The Discharger can identify the cause or likely cause of the discharge event;
  - ii. The discharge was exceptional, unintentional, temporary and caused by factors beyond the reasonable control of the Discharger;
  - iii. The discharge could not have been prevented by the exercise of reasonable control, such as proper management, operation and maintenance; adequate treatment facilities or collection system facilities or components (e.g., adequately enlarging treatment or collection facilities to accommodate growth or adequately controlling and preventing infiltration and inflow); preventive maintenance; installation of adequate backup equipment.
  - iv. The Discharger submitted a claim to the Board's Executive Officer within 10 working days of the date of the discharge that the discharge meets the conditions of this provision; and
  - v. The Discharger took all reasonable steps to stop, and mitigate the impact of, the discharge as soon as possible.
- d. *Burden of proof.* In any enforcement proceeding, the Discharger has the burden of proof to establish that the criteria in this section have been met. A claim to be submitted under Sections B.2.c. and B.3.d. above may also be provided in the space allocated for claims in the web-based SSO reporting system (when the system becomes available), which currently is being developed pursuant to the Board SSO Resolution No. 2003-R2-0095. The Discharger shall provide additional available information pertaining to the SSO upon request by the Board's staff. The information may include:



- i. Relevant sewer maintenance/repair logs including the associated costs of sewer rehabilitation, cleaning/flushing, inspection, and replacement for the pipe section where the SSO occurred; and
- ii. Information relating to storm event, such as size of the storm, length of such storm during the SSO.

**16. Wastewater Facilities, Review and Evaluation, and Status Reports**

- a. The Discharger shall operate and maintain its wastewater collection, treatment, and disposal facilities in a manner to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary, in order to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger's service responsibilities.
- b. The Discharger shall regularly review and evaluate its wastewater facilities and operation practices in accordance with section a. above. Reviews and evaluations shall be conducted as an ongoing component of the Discharger's administration of its wastewater facilities.
- c. The Discharger shall provide the Executive Officer, upon his or her request, a report describing the current status of its wastewater facility review and evaluation, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each Annual Self-Monitoring Report, a description or summary of review and evaluation procedures, and applicable wastewater facility programs or capital improvement projects.

**17. Operations and Maintenance Manual, Review and Status Reports.**

- a. The Discharger shall maintain an O & M Manual as described in the findings of this Order for the Discharger's wastewater facilities. The O & M Manual shall be maintained in usable condition, and available for reference and use by all applicable personnel.
- b. The Discharger shall regularly review, revise, or update, as necessary, the O & M Manual(s) so that the document(s) may remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and revisions or updates shall be completed as necessary. For any significant changes in treatment facility equipment or operation practices, applicable revisions shall be completed within 90 days of completion of such changes.
- c. The Discharger shall provide the Executive Officer, upon his or her request, a report describing the current status of its operations and maintenance manual, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each Annual Self-Monitoring Report, a description or summary of review and evaluation procedures, and applicable changes to, its operations and maintenance manual.

#### **18. Contingency Plan, Review and Status Reports**

- a. The Discharger shall maintain a Contingency Plan as required by Board Resolution 74-10 (available online—see Standard Language and Other References Available Online, below), and as prudent in accordance with current municipal facility emergency planning. The discharge of pollutants in violation of this Order where the Discharger has failed to develop and/or adequately implement a contingency plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.
- b. The Discharger shall regularly review, and update as necessary, the Contingency Plan so that the plan may remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and updates shall be completed as necessary.
- c. The Discharger shall provide the Executive Officer, upon his or her request, a report describing the current status of its contingency plan, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each Annual Self-Monitoring Report, a description or summary of review and evaluation procedures, and applicable changes to, its contingency plan.

#### **19. Self-Monitoring Program**

The Discharger shall comply with the Self-Monitoring Program (Attachment C). The Self Monitoring Program may be amended by the Executive Officer pursuant to U.S. EPA regulations 40 CFR 122.63.

#### **20. Standard Provisions and Reporting Requirements**

The Discharger shall comply with all applicable items of the Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993 (the Standard Provisions - available online – see References Available Online, below), including any amendments thereto. Where provisions or reporting requirements specified in this Order are different from equivalent or related provisions or reporting requirements given in the Standard Provisions, the specifications of this Order shall apply.

#### **21. Change in Control or Ownership**

- a. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, and shall immediately forward a copy of said letter to the Executive Officer.
- b. Any succeeding owner must apply in writing to the Executive Officer requesting transfer of this Order (per Section E.4 of the Standard Provisions) to assume responsibility for and control of operations under this Order. Failure to submit the request shall be considered a violation of the California Water Code for discharging without Waste Discharge Requirements.

## **22. Permit Reopener**

The Board may modify or reopen this Order and Permit prior to its expiration date in any of the following circumstances:

- a. Present or future investigations demonstrate that the discharge(s) governed by this Order and Permit will have, or will cease to have, reasonable potential to cause or contribute to adverse impacts on the receiving water's water quality, beneficial uses, or both;
- b. New or revised WQOs come into effect for the receiving water (whether statewide, regional, or site-specific), requiring modification of effluent limits contained in this Order (Adoption of effluent limitations contained in this Order and Permit is not intended to restrict in any way future modifications based on legally adopted WQOs or as otherwise permitted under Federal regulations governing NPDES permit modifications.);
- c. An adopted TMDL or SSO requires modification of limits contained in this Permit;
- d. Translator or other water quality studies provide a basis for determining that one or more permit conditions should be modified;
- e. An administrative or judicial decision on a separate NPDES Permit or WDR that addresses requirements similar to this discharge; and
- f. As authorized by law.

The Discharger may request permit modification based on b, c, d and e above, and shall include an antidegradation and antibacksliding analysis with any such request.

## **23. NPDES Permit Effective Date**

This Order shall serve as a National Pollutant Discharge Elimination System (NPDES) permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective on February 1, 2005, provided the U.S. EPA Regional Administrator has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

## **24. Order Expiration and Reapplication**

- a. This Order expires on December 31, 2009.
- b. In accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code, the Discharger must file a report of waste discharge no later than 180 days before the expiration date of this Order as application for reissue of this permit and waste discharge requirements. The application shall be accompanied by a summary of all available water quality data including conventional pollutant data from no less than the most recent three years, and of toxic pollutant data no less than from the most recent five years, in the discharge and receiving water. Additionally, the application shall be accompanied with the results of the whole effluent chronic toxicity screening study specified in Part B of the Self-Monitoring Program.

Novato Sanitary District  
NPDES Permit No. CA0037958  
Order No: R2-2004-0093

I, Bruce Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on November 17, 2004.



BRUCE H. WOLFE  
EXECUTIVE OFFICER

**Attachments:**

- A. Discharge Facility Location Map
- B. Discharge Facility Treatment Process Diagram
- C. Self-Monitoring Program, Part B
- D. Fact Sheet
- E. July 22, 2004 *Novato Sanitary District Infeasibility Study*
- F. July 22, 2004 *Novato Sanitary District Copper and Nickel Translator Calculation*
- G. April 28, 2004 *Workplan for Ignacio Treatment Plant, NPDES Permit No. CA0037955*
- H. Pretreatment Program Requirements
- I. The following documents are part of this Permit, but are not physically attached due to volume. They are available on the internet at [www.swrcb.ca.gov/rwqcb2/Download.htm](http://www.swrcb.ca.gov/rwqcb2/Download.htm)
  - Self-Monitoring Program, Part A, adopted August 1993
  - Standard Provisions and Reporting Requirements, August 1993
  - Board Resolution No. 74-1
  - June 11, 2001 Board Staff Report *Statistical Analysis of Pooled Data from Regionwide UltraClean Mercury Sampling for Municipal Dischargers.*
  - August 6, 2001 Board Staff Letter: *Requirement for Priority Pollutant Monitoring in Receiving Water and Wastewater Discharges*

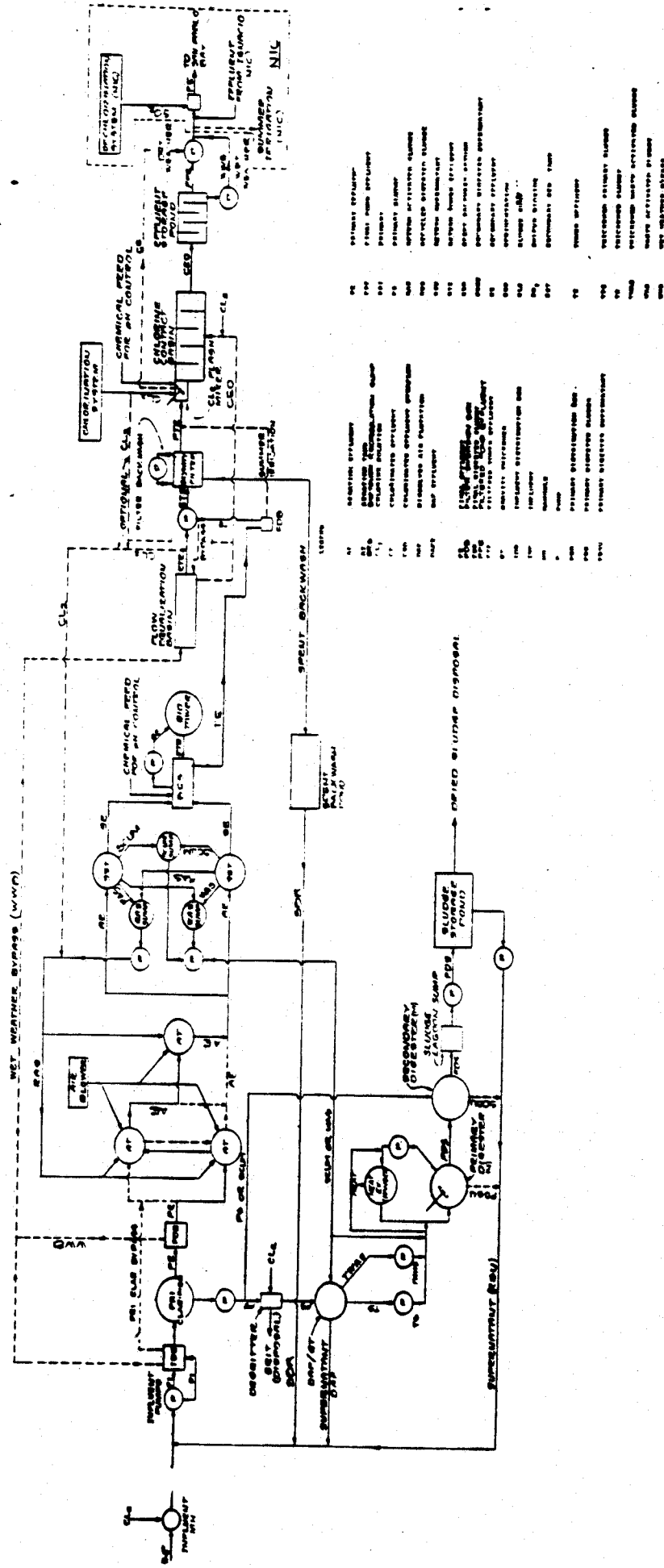
Novato Sanitary District  
NPDES Permit No. CA0037958  
Order No: R2-2004-0093

**Attachment A.  
Discharge Facility Location Map**



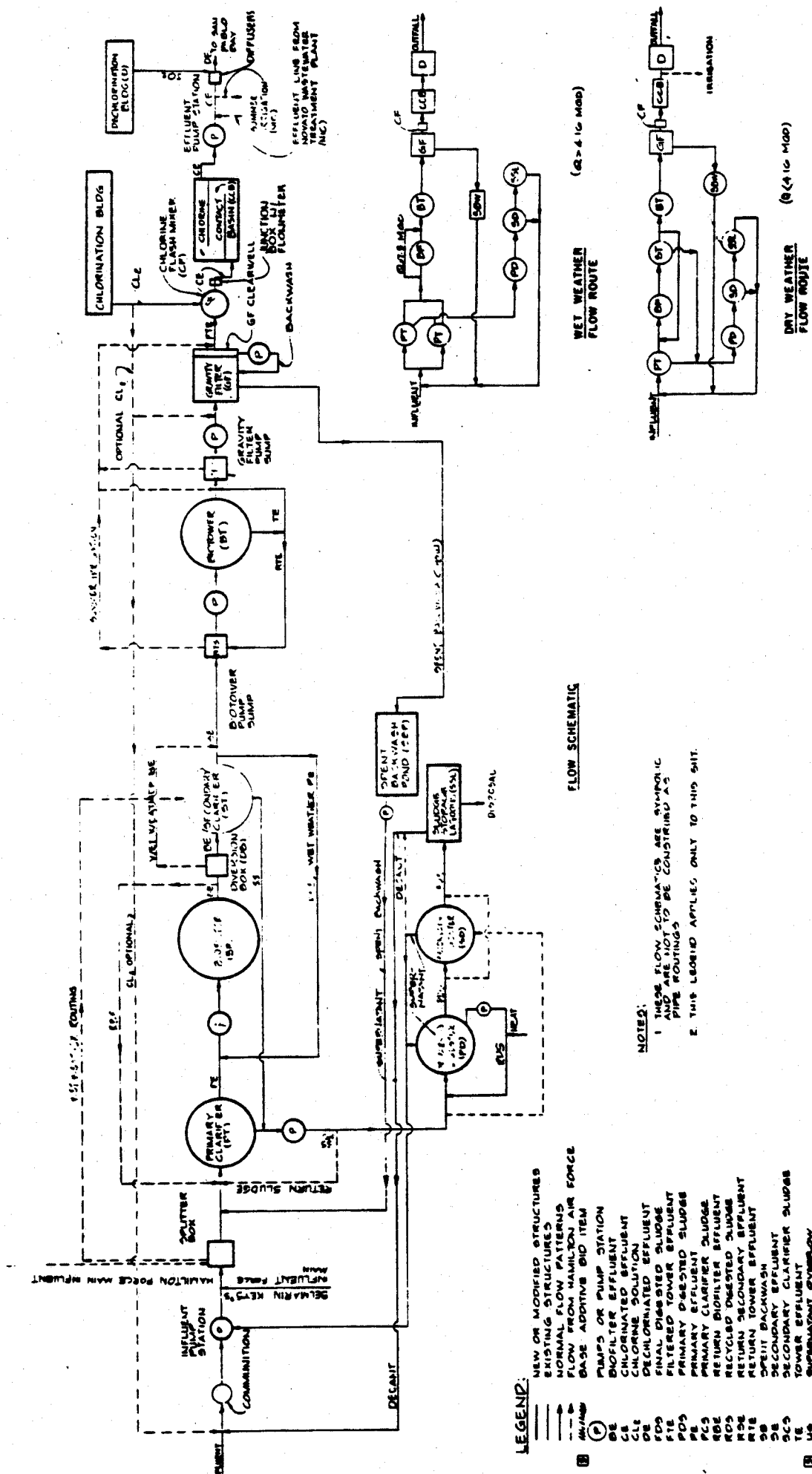
Novato Sanitary District  
NPDES Permit No. CA0037958  
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**Attachment B.**  
**Discharge Facility Treatment Process Diagram**



Novato Wastewater Treatment Plant Flow Diagram



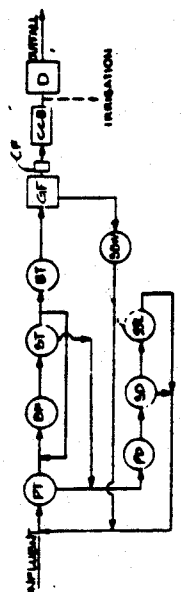


- LEGEND:**
- NEW OR MODIFIED STRUCTURES
  - EXISTING STRUCTURES
  - NORMAL FLOW PATTERNS
  - FLOW FROM HAMILTON ARE FORCE
  - BASE ADDITIVE BID ITEM
  - PUMPS OR PUMP STATION
  - CHLORINATED EFFLUENT
  - CHLORINE SOLUTION
  - DECHLORINATED EFFLUENT
  - FINAL DIGESTED SLUDGE
  - FILTERED TOWER EFFLUENT
  - PRIMARY DIGESTED SLUDGE
  - PRIMARY EFFLUENT
  - PRIMARY CLARIFIER EFFLUENT
  - RETURN BIOFILTER SLUDGE
  - RECYCLED DIGESTED SLUDGE
  - RETURN SECONDARY EFFLUENT
  - RETURN TOWER EFFLUENT
  - SPENT BACKWASH
  - SECONDARY EFFLUENT
  - SECONDARY CLARIFIER
  - TOWER EFFLUENT
  - SUPERFLUANT OVERFLOW

**FLOW SCHEMATIC**

NOTES:  
 1. THESE FLOW SCHEMATICS ARE SYMBOLIC AND ARE NOT TO BE CONSIDERED AS PIPE ROUTINGS  
 2. THIS LEGEND APPLIES ONLY TO THIS SHEET

**WET WEATHER FLOW ROUTE**  
 (Q > 4.16 MGD)



**DRY WEATHER FLOW ROUTE**  
 (Q < 4.16 MGD)



**Ignacio Wastewater Treatment Plant Flow Diagram**

Novato Sanitary District  
NPDES Permit No. CA0037958  
Order No: R2-2004-0093

**Attachment C.**  
**Self-Monitoring Program, Part B**

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**

**SAN FRANCISCO BAY REGION**

**SELF-MONITORING PROGRAM**

**FOR**

**NOVATO SANITARY DISTRICT**

**NOVATO, MARIN COUNTY**

**NPDES PERMIT NO. CA0037958**

**ORDER NO. R2-2004-0093**

**Consists of:**

**Part A, Adopted August 1993  
(Not attached)**

**And**

**Part B, Effective February 1, 2005**

**(Attached)**

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## I. Station Descriptions

NOTE: A sketch showing the locations of all sampling and observation stations shall be included in the Annual Report, and in the monthly report if stations change.

<u>Station</u>	<u>Description</u>
A. INFLUENT	
A-001	At any point in the Ignacio treatment plant's headworks at which all waste tributary to that plant is present and preceding any phase of treatment.
A-002	At any point in the Novato treatment plant's headworks at which all waste tributary to that plant is present and preceding any phase of treatment.
B. EFFLUENT	
E-001	At any point in the Ignacio treatment plant's outfall between the point of discharge and the point at which all waste tributary to that outfall is present, and where adequate contact with the disinfectant is assured.
E-002	At any point in the Novato treatment plant's outfall between the point of discharge and the point at which all waste tributary to that outfall is present, and where adequate contact with the disinfectant is assured.
E-003	At any point in the dechlorination facilities at which all waste from both treatment plants has been disinfected and dechlorinated.
C. LAND OBSERVATIONS	
P001-1 thru P-001-'n'	Located at the periphery of the Ignacio plant, at equidistant intervals, not to exceed 200 feet. (A sketch showing the locations of these stations will accompany each report).
P002-1 thru P-002-'n'	Located at the periphery of the Ignacio plant, at equidistant intervals, not to exceed 200 feet. (A sketch showing the locations of these stations will accompany each report).
D. OVERFLOWS AND BYPASSES	
OV-1 thru OV-'n'	Bypass or overflows from manholes, pump stations, collection systems or any sludge drying bed areas.
E. SLUDGE	
The Discharger shall continue to analyze sludge on a semi-annual basis for priority pollutant metals and organics.	

## II. Schedule Of Sampling, Analyses And Observations

The schedule of sampling, analysis and observation shall be that given in Tables 1, 2, and 3, below. Sampling and analyses specified at E-003 may be physically collected at E-003, or may be reported as flow-weighted averages of the individual plants' results. Sampling and analysis of additional constituents is required pursuant to the Water Board's August 6, 2001 Letter titled *Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy*, as delineated in Table 6, below. This additional pollutant monitoring shall be carried out annually until the Discharger's application for reissuance of this NPDES permit.

During blending events as defined in Provision A.2.b of the Permit, 24-hour composite samples or grabs will be collected daily at the individual plants' outfalls and analyzed for TSS and enterococcus. If the TSS or enterococcus values exceed the limitations contained in the Permit (45 mg/L for TSS, and 276 MPN per 100ml for enterococcus), the effluent will be sampled daily for all constituents listed in Tables 2 and 3 below until the flow detectors indicate there have been no bypass events for 24 hours. If there are no enterococcus exceedences associated with blending events at the Novato plant during the first wet season after permit adoption, the District may apply to the Executive Officer for reduction or elimination of enterococcus sampling during blending events

Table 1. Schedule Of Influent Sampling, Analyses And Observations.

SAMPLING STATION		A-001	A-002
TYPE OF SAMPLE [1]	Notes	C-24 [1] [2]	C-24 [1] [2]
BOD <sub>5</sub> 20°C, or CBOD (mg/L & kg/d)	[15]	2/W	2/W
Total Suspended Solids (mg/L & kg/d)	[15]	3/W	3/W
Pretreatment Requirements µg/L or ppb	[13]	M	M

Footnote for Table 1.

[1] Influent flow monitoring is not required because neither the Ignacio plant (A-001) nor the Novato Plant (A-002) has influent flow measuring.

Table 2. Schedule Of Individual Plants' Effluent Sampling, Analyses And Observations

SAMPLING STATION		E-001 and E-002		All P	All OV
TYPE OF SAMPLE	Notes	G [1]	C-24 [1] [2]	O [1]	O [1]
Flow Rate (MGD)	[3]		Cont/D		
BOD <sub>5</sub> 20°C, or CBOD (mg/L & kg/d)	[15]		2/W		
Oil and Grease (mg/L & kg/d)	[4]		M		
Total Suspended Solids (mg/L & kg/d)	[15]		3/W		
pH (s.u.)	[14]	5/W			
Temperature (°C)		5/W			
Standard Observations				M	E
Pretreatment Requirements µg/L or ppb	[13]	M			
Chlorine Dosage, mg/L	[12]	D			

SAMPLING STATION		E-001 and E-002		All P	All OV
TYPE OF SAMPLE	Notes	G [1]	C-24 [1] [2]	O [1]	O [1]
Enterococcus (MPN/100 ml)	[16]	3/W			

Table 3. Schedule Of Combined Plants' Effluent Sampling, Analyses And Observations

SAMPLING STATION		E-003		All P	All OV
TYPE OF SAMPLE	Notes	G [1]	C-24 [1] [2]	O [1]	O [1]
Chlorine Residual (mg/L & kg/d)		H or continuous			
Acute Toxicity (% survival)	[6]		M		
Chronic Toxicity	[7]		Q		
Ammonia Nitrogen (mg/L & kg/d)		3/W			
Copper (µg/L)			M		
Lead (µg/L)			M		
Mercury (µg/L)	[9]	M			
Nickel (µg/L)			M		
Cyanide (µg/L)	[10]	M			
4,4'-DDE (µg/L)		2/Y			
4,4'-DDD (µg/L)		2/Y			
Dieldrin (µg/L)		2/Y			
Heptachlor Epoxide (µg/L)		2/Y			
2,3,7,8-TCDD and congeners	[11]	2/Y			

### **LEGEND FOR TABLES 1, 2, and 3**

#### Types of Samples:

C-24= composite sample, 24 hours (includes continuous sampling, such as for flows)

Cont.= continuous sampling

G= grab sample

O= observation

#### Frequency of Sampling:

E = Each occurrence

D = Once each day

Cont. = continuous monitoring

Cont/D = continuous monitoring & daily reporting

M = once each month

W = once each week

Y = once each calendar year

2/Y = Two times a year; one in wet season, one in dry season.

H = every hour

Q = once each calendar quarter

(with at least two-month intervals)

#### Parameter and Unit Abbreviations:

BOD<sub>5</sub> 20°C = Biochemical Oxygen Demand, 5-day, at 20°C

CBOD<sub>5</sub> 20°C = Carbonaceous BOD, 5-day, at 20 °C

TSS = Total Suspended Solids

MGD = million gallons per day

mg/L = milligrams per liter

ml/L-hr = milliliters per liter, per hour

µg/L = micrograms per liter

pg/L = picograms per liter

kg/day = kilograms per day

kg/mo = kilograms per month

#### FOOTNOTES FOR TABLES 1, 2, and 3

- [1] The Discharger shall use approved USEPA Methods with the lowest Minimum Levels specified in the SIP and described in footnote 1 of effluent limitations B.7, and in the August 6, 2001, letter.
- [2] Composite sampling: 24-hour composites may be made up of discrete grabs collected over the course of a day and volumetrically or mathematically flow-weighted. Samples for inorganic pollutants may be combined prior to analysis. If only one grab sample will be collected, it should be collected during periods of maximum peak flows. Samples shall be taken on random days.
- [3] Flow Monitoring: Effluent flows shall be measured continuously at Outfalls E-001 and E-002, and recorded and reported daily.
- [4] Oil & Grease Monitoring: Each Oil & Grease sample event shall consist of a composite sample comprised of three grab samples taken at equal intervals during the sampling date, with each grab sample being collected in a glass container. The grab samples shall be mixed in proportion to the instantaneous flow rates occurring at the time of each grab sample, within an accuracy of plus or minus 5 %. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsing as soon as possible after use, and the solvent rinsing shall be added to the composite sample for extraction and analysis.
- [6] Acute Toxicity: If specific identifiable substances in the discharge can be demonstrated by the discharger as being rapidly rendered harmless upon discharge to the receiving water, compliance with the acute toxicity limit may be determined after the test samples are adjusted to remove the influence of those substances. Written approval from the Executive Officer must be obtained to authorize such an adjustment. An example is pH adjustment to control the formation of unionized ammonia. In this example, the Discharger must first demonstrate that ammonia is the cause of the observed toxicity using phase 3 (confirmation) toxicity identification evaluations. The Discharge must then show that based on the conditions in the receiving water, the ammonia that is in the discharge does not cause any violation of the un-ionized ammonia receiving water limits outside the zone of initial dilution.
- Bioassays: Effluent used for fish bioassays must be dechlorinated prior to testing. Monitoring of the bioassay water shall include, on a daily basis, the following parameters: pH, dissolved oxygen, ammonia nitrogen, and temperature. These results shall be reported. If a violation of acute toxicity requirements occurs, a new bioassay test shall be started as soon as practicable and testing should continue back to back until compliance is demonstrated.
- [7] Chronic Toxicity: Chronic toxicity testing shall be performed in accordance with the requirements specified in Section III.B, below. During blending events, the Discharger is not required to monitor for chronic toxicity.

#### *Chronic Toxicity Reporting Requirements*

- a. Routine Reporting: Toxicity test results for the current reporting period shall include, at a minimum, for each test:
- (1) Sample date(s)
  - (2) Test initiation date
  - (3) Test species
  - (4) End point values for each dilution (e.g. number of young, growth rate, percent survival)
  - (5) NOEC value(s) in percent effluent
  - (6) IC<sub>15</sub>, IC<sub>25</sub>, IC<sub>40</sub>, and IC<sub>50</sub> values (or EC<sub>15</sub>, EC<sub>25</sub> ... etc.) in percent effluent
  - (7) TUc values (100/NOEC, 100/IC<sub>25</sub>, or 100/EC<sub>25</sub>)
  - (8) Mean percent mortality ( $\pm$ s.d.) after 96 hours in 100% effluent (if applicable)
  - (9) NOEC and LOEC values for reference toxicant test(s)
  - (10) IC<sub>50</sub> or EC<sub>50</sub> value(s) for reference toxicant test(s)
  - (11) Available water quality measurements for each test (pH, D.O., temperature, conductivity, hardness, salinity, ammonia)
- b. Compliance Summary: The results of the chronic toxicity testing shall be provided in the most recent self-monitoring report and shall include a summary table of chronic toxicity data from at least eleven of the most recent samples. The information in the table shall include the items listed above under Note [7] 2.a, item numbers 1, 3, 5, 6(IC<sub>25</sub> or EC<sub>25</sub>), 7, and 8.
- [9] The Discharger may, at their option, sample mercury either as grab or 24-hr composite. Use ultra-clean sampling (USEPA 1669) to the maximum extent practicable, and ultra-clean analytical methods (USEPA 1631) for mercury monitoring. The Discharger may use alternative methods of analysis (such as USEPA 245), if that alternate method has a Minimum Level of 2 ng/L or less.



- [10] The Discharger may, at their option, analyze for cyanide as Weak Acid Dissociable Cyanide using protocols specified in Standard Method Part 4500-CN-I, USEPA Method OI 1677, USEPA Method 335.2, or equivalent alternatives in latest edition. Alternative methods of analysis must be approved by the Executive Officer.
- [11] Chlorinated Dibenzodioxins and Chlorinated Dibenzofurans shall be analyzed using the latest version of USEPA Method 1613. Alternative methods of analysis must be approved by the Executive Officer. The analysis shall be capable of achieving one half the EPA method 1613 MLs. The Discharger shall also collect four liter samples to lower the detection limit to the greatest extent practicable.
- [12] Chlorine Residual Monitoring. During all times when chlorination is used for disinfection of the effluent, effluent chlorine residual concentrations shall be monitored continuously, or by grab samples taken hourly. Chlorine residual concentrations shall be monitored and reported for sampling points both prior to and following dechlorination. Total chlorine dosage (mg/l & kg/day) shall be recorded on a daily basis.
- [13] Pretreatment Program Requirements: see Table 5, below.
- [14] Daily minimum and maximum for pH shall be reported.
- [15] Percent removal for BOD and TSS (effluent vs. influent) shall also be reported.
- [16] The approved methods for the Enterococcus analysis are Enterolert, Membrane Filtration, or multiple tube fermentation. The Discharger may submit a request to the Executive Officer for a reduction in sampling frequency once it has collected 24 months of data demonstrating consistence compliance with the effluent bacterial limitations.

Table 4. Minimum Levels

For compliance monitoring, analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to the Minimum Levels given below. All Minimum Levels are expressed as µg/L, approximately equivalent to parts per billion (ppb).

CTR #	Constituent [a]	Types of Analytical Methods [b]						
		GC	GCMS	Color	GFAA	ICPMS	SPGFAA	CVAF
6.	Copper					0.5	2	
7.	Lead					0.5		
8.	Mercury[c]							0.002
9.	Nickel				5	1	5	
14.	Cyanide			5				
109.	4,4'-DDE	0.05						
	4,4'-DDD	0.05						
111.	Dieldrin	0.01						
	Heptachlor Epoxide	0.01						
16.	2,3,7,8-TCDD[d]							

## Footnotes to Table 4 of Self-Monitoring Program:

- [a] According to the SIP, method-specific factors (MSFs) can be applied. In such cases, this additional factor must be applied in the computation of the reporting limit. Application of such factors will alter the reported ML (as described in section 2.4.1). Dischargers are to instruct laboratories to establish calibration standards so that the ML value is the lowest calibration standard. At no time is the Discharger to use analytical data derived from the extrapolation beyond the lowest point of the calibration curve.
- [b] Laboratory techniques are defined as follows:

GC = Gas Chromatography;  
 GCMS = Gas Chromatography/Mass Spectrometry;  
 Color = Colorimetric;  
 GFAA = Graphite Furnace Atomic Absorption;

ICPMS = Inductively Coupled Plasma/Mass Spectrometry;  
 SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e. EPA 200.9); and  
 CVAF = Cold Vapor Atomic Fluorescence.

[c] Use ultra-clean sampling and analytical methods for mercury monitoring per August 6, 2001 Letter issued to Discharger. The ML for mercury is 0.002 µg/L.

[d] The SIP does not contain a ML for this constituent.

Table 5. Pretreatment Monitoring Requirements

Constituents	Sample Locations, Frequency, and Analytical Method.		
	Influent A-001 and A -002	Effluent E-001 and E-002	Sludge [2]
VOC	2/Y 624	2/Y 624	2/Y 8260
BNA	2/Y 625	2/Y 625	2/Y 8260
Metals [1]	M	M	2/Y

Definition of terms in Table 3:

M = once each month

2/Y = twice each calendar year at about 6-month intervals (once in November and once in April)

VOC = volatile organic compounds

BNA = base/neutrals and acids extractable organic compounds

Key to notes used in Table 3:

[1] Same EPA method used to determine compliance with the respective NPDES permit. The parameters are copper, lead, mercury, nickel, silver, zinc, and cyanide.

[2] EPA approved methods.

Table 6. Additional pollutant monitoring.

Constituent	Suggested Analytical Method	Sample Type
Metals (except mercury, and hexavalent chromium)	GFAA or ICP, and Gas hydride AA for As and Se	24 hr composite
Hexavalent chromium <sup>1</sup>	Standard Method 3500	grab
Volatile and semi-volatile organics	EPA 601, 602, 603, 604, 606, 610, 624 <sup>2</sup> (HPLC) or equivalent GC/MS method <sup>3</sup>	grab
Other organics, chlorinated pesticides and PCBs (w/ TS) <sup>4</sup>	EPA 625, 608	grab
Organophosphate pesticides	EPA 614	24-hr composite

### III. Specifications for Sampling and Analysis

Sampling, analyses and observations, and recording and reporting, of results shall be conducted in accordance with the schedule given in Tables 1, 2, and 3, as applicable, of this SMP, with the following specifications, and with all other applicable requirements given in this SMP. All analyses shall be conducted using analytical methods that are commercially and reasonably available, and that provide quantification of sampling parameters and constituents sufficient to evaluate compliance with applicable effluent limits.

#### A. Influent Monitoring

Influent monitoring identified in Table 1 of Part B of this Self-Monitoring Program is the minimum required monitoring. Additional sampling and analyses may be required in accordance with Pretreatment Program or Pollution Prevention/Source Control Program requirements.

#### B. Chronic Toxicity Monitoring Requirements

1. Sampling. The Discharger shall collect 24-hour composite samples of WWTP's effluent at the compliance point station specified in Table 3 of the Self-Monitoring Program, for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, 24-hour composite samples collected on consecutive days are required.
2. Test Species: Chronic toxicity shall be monitored by using critical life stage test(s) and the most sensitive test species identified by screening phase testing or previous testing conducted under the ETCP. The Discharger shall conduct routine monitoring with the species approved by the

<sup>1</sup> Total Chromium may be substituted to for Hexavalent Chromium at the discharger's discretion.

<sup>2</sup> if the method detection limits (MDL) can be demonstrated to fall below the minimum levels (ML) listed in Table 4 for the GC methods (EPA 601 and 602)

<sup>3</sup> The equivalent GC/MS method must be able to quantify to an equivalent level as the GC methods listed above.

Executive Officer. At the time of this permit adoption, the approved species is the Water Flea (Ceriodaphnia dubia).

3. Conditions for Accelerated Monitoring: The Discharger shall conduct accelerated monitoring when either of the following conditions is exceeded:
  - a. Three sample median value of 1 TUc, or
  - b. Single sample maximum value of 2 TUc.
4. Methodology: Sample collection, handling and preservation shall be in accordance with U.S. USEPA protocols. The test methodology used shall be in accordance with the references cited in this Permit, or as approved by the Executive Officer. A concurrent reference toxicant test shall be performed for each test.
5. Dilution Series: The Discharger shall conduct tests at 6.25 percent effluent as discharged (%), 12.5%, 25%, 50%, and 100%.

#### IV. Recording Requirements

- A. General Recording Requirements are described in Section E of Part A of the Self-Monitoring Program.
- B. Any bypass, overflow, or significant non-compliance incident shall be recorded according to Sections E.1. and E.2. of Part A.

#### V. Reporting Requirements

- A. General Reporting Requirements are described in Section E of the Regional Board's *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits*, dated August 1993, and Part A of the Self-Monitoring Program.
- B. Modifications to Self-Monitoring Program, Part A:
  1. If any discrepancies exist between Part A and Part B of the SMP, Part B prevails.
  2. Section C1: reference to influent samples (for the Novato Plant) excluding sidestreams from sludge storage pond supernatant, digester supernatant, filter backwash, and DAF supernatant. It is not possible to obtain an influent sample that does not contain these sidestreams.
  3. Sections C.3. and C.5. are satisfied by participation in the Regional Monitoring Program.
  4. Modify Section F.1 as follows:

##### Spill Reports

A report shall be made of any spill of oil or other hazardous material. The spill shall be reported by telephone as soon as possible and no later than 24 hours following occurrence or discharger's knowledge of occurrence. Spills shall be reported by telephone as follows:

During weekdays, during office hours of 8 am to 5 pm, to the Board: Current telephone number: (510) 622 - 2300, (510) 622-2460 (FAX).

During non-office hours, to the State Office of Emergency Services: Current telephone number: (800) 852 - 7550.

A report shall be submitted to the Board within five (5) working days following telephone notification, unless directed otherwise by Board staff. A report submitted by facsimile transmission is acceptable for this reporting. The written report shall contain information relative to: . . .

5. Modify Section F.3 as follows:

**Reports of Plant Bypass, Treatment Unit Bypass and Permit Violation**

The following requirements apply to all treatment plant bypasses and significant non-compliance occurrences, except for bypasses under the conditions contained in 40 CFR Part 122.41 (m)(4) as stated in Standard Provision A.13. In the event the Discharger violates or threatens to violate the conditions of the waste discharge requirements and prohibitions or intends to experience a plant bypass or treatment unit bypass due to: . . .

6. Modify Section F.4 as follows:

**Self-Monitoring Reports**

For each calendar month, a self-monitoring report (SMR) shall be submitted to the Regional Board in accordance with the requirements listed in Self-Monitoring Program, Part A. The purpose of the report is to document treatment performance, effluent quality and compliance with waste discharge requirements prescribed by this Order, as demonstrated by the monitoring program data and the Discharger's operation practices. The report shall be submitted to the Board by the first day of the second month after the month being reported on. . . .

[And add at the end of Section F.4 the following:]

- g. The Discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. The format currently in use was approved by the Executive Officer in a letter dated December 17, 1999, titled *Official Implementation of Electronic Reporting System (ERS)*. The ERS format includes, but is not limited to, a transmittal letter, summary of violation details and corrective actions, and transmittal receipt. If there are any discrepancies between the ERS requirements and the "hard copy" requirements listed in the SMP, then the approved ERS requirements supercede.

7. Add at the end of Section F.5, Annual Reporting, the following:

- d. A plan view drawing or map showing the Dischargers' facility, flow routing and sampling and observation station locations.

8. Add as Section F.6 the following:

**Reports of Overflows**

Until the Board completes development of its electronic sanitary sewer overflow reporting system, overflows of sewage from the Discharger's collection system, other than overflows specifically addressed elsewhere in this Order and SMP, shall be reported to the Board as described below. Once the electronic sanitary sewer overflow reporting system is completed, the Discharger shall use it consistent with its requirements.

1. *Overflows in excess of 1,000 gallons*

Overflows in excess of 1,000 gallons shall be reported by telephone and written report, as follows:

- a. Overflows shall be reported by telephone as soon as possible and no later than 24 hours following occurrence or discharger's knowledge of occurrence. Notification shall be made as follows:

Notify the current Board staff inspector, or case handler, by phone conversation or message, or by facsimile (Board Fax number: (510) 622 – 2460).

- i. Notify the State Office of Emergency Services, phone number: (800) 852 - 7550.

- b. Submit a written report of the incident in follow-up to telephone notification. The written report shall be submitted along with the regular self-monitoring report for the reporting period of the incident, unless directed otherwise by Board staff, and shall include the following:

- Estimated date and time of overflow start and end.
- Location of overflow (street address or description of location).
- Estimated volume of overflow.
- Final disposition of overflowed wastewater (to land, storm drain, surface water body).
- Include the name of any receiving water body affected.
- Cause of overflow.
- Observed impacts to receiving waters if any (e.g., discoloration, fish kill).
- Corrective actions that were taken to contain, minimize or cleanup the overflow.
- Future corrective actions planned to be taken to prevent recurrence and time schedule of implementation.
- Persons or agencies contacted.

2. *Overflows less than 1,000 gallons*

Overflows less than 1,000 gallons shall be reported by written report, as follows:

- a. The Discharger shall prepare and retain records of such overflows, with records available for review by Board staff upon request.
- b. The records for these overflows shall include the information as listed in 1.e, above.
- c. A summary of these overflows shall be submitted to the Board annually, as part of the Discharger's Self-Monitoring Program Annual Report.

## **VI. Selected Constituents Monitoring**

- A. Effluent monitoring shall include evaluation for all constituents listed in Tables 2 and 3 by sampling and analysis of final effluent.
- B. Analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to respective water quality objectives.

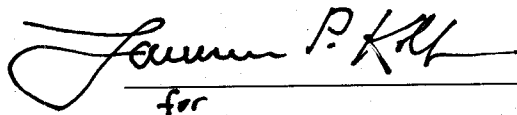
## **VII. Monitoring Methods And Minimum Detection Levels**

The Discharger may use the methods listed in Table 4, above, or alternate test procedures that have been approved by the U.S. EPA Regional Administrator pursuant to 40 CFR 136.4 and 40 CFR 136.5 (revised as of May 14, 1999).

## **VIII. Self-Monitoring Program Certification**

I, Bruce Wolfe, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Board Order No. R2-2004-0093.
2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Discharger, and revisions will be ordered by the Executive Officer.
3. Is effective as of February 1, 2005.



for  
Bruce H. Wolfe,  
Executive Officer

**Enclosure:**

Chronic Toxicity – Definition of Terms and Screening Phase Requirements

**CHRONIC TOXICITY**  
**DEFINITION OF TERMS & SCREENING PHASE REQUIREMENTS**

**I.      Definition of Terms**

- A.      No observed effect level (NOEL) for compliance determination is equal to  $IC_{25}$  or  $EC_{25}$ . If the  $IC_{25}$  or  $EC_{25}$  cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.
- B.      Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Kärber.  $EC_{25}$  is the concentration of toxicant (in percent effluent) that causes a response in 25% of the test organisms.
- C.      Inhibition Concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal, non-quantal biological measurement, such as growth. For example, an  $IC_{25}$  is the estimated concentration of toxicant that would cause a 25% reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as EPA's Bootstrap Procedure.
- D.      No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

**II.     Chronic Toxicity Screening Phase Requirements**

- A.      The discharger shall perform screening phase monitoring:
1.      Subsequent to any significant change in the nature of the effluent discharged through changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to pretreatment, source control, and waste minimization efforts, or
  2.      Prior to Permit reissuance. Screening phase monitoring data shall be included in the NPDES Permit application for reissuance. The information shall be as recent as possible, but may be based on screening phase monitoring conducted within 5 years before the permit expiration date.
- B.      Design of the screening phase shall, at a minimum, consist of the following elements:
1.      Use of test species specified in Tables 1 and 2 (attached), and use of the protocols referenced in those tables, or as approved by the Executive Officer;
  2.      Two stages:
    - a.      Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on Table 3 (attached); and
    - b.      Stage 2 shall consist of a minimum of two test batteries conducted at a monthly frequency using the three most sensitive species based on the Stage 1 test results and as approved by the Executive Officer.
  3.      Appropriate controls; and
  4.      Concurrent reference toxicant tests.
- C.      The discharger shall submit a screening phase proposal to the Executive Officer for approval. The proposal shall address each of the elements listed above.



**TABLE C 1**  
**CRITICAL LIFE STAGE TOXICITY TESTS FOR ESTUARINE WATERS**

SPECIES	SCIENTIFIC NAME	EFFECT	TEST DURATION	REFERENCE
alga	( <u>Skeletonema costatum</u> )	growth rate	4 days	1
	( <u>Thalassiosira pseudonana</u> )	growth rate		
red alga	( <u>Champia parvula</u> )	number of cystocarps	7-9 days	3
giant kelp	( <u>Macrocystis pyrifera</u> )	percent germination; germ tube length	48 hours	2
abalone	( <u>Haliotis rufescens</u> )	abnormal shell development	48 hours	2
oyster	( <u>Crassostrea gigas</u> )	abnormal shell development;	48 hours	2
mussel	( <u>Mytilus edulis</u> )	percent survival		2
echinoderms		percent fertilization	1 hour	2
urchins	( <u>Strongylocentrotus purpuratus</u> , <u>S. franciscanus</u> )	percent fertilization	1 hour	2
sand dollar	( <u>Dendraster excentricus</u> )	percent fertilization	1 hour	2
shrimp	( <u>Mysidopsis bahia</u> )	percent survival; growth; fecundity	7 days	3
silversides	( <u>Menidia beryllina</u> )	larval growth rate; percent survival	7 days	3

**Toxicity Test References:**

1. American Society for Testing Materials (ASTM). 1990. Standard Guide for conducting static 96-hour toxicity tests with microalgae. Procedure E 1218-90. ASTM Philadelphia, PA.
2. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms. USEPA/600/R-95/136. 1995.
3. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to Marine and Estuarine Organisms as specified in 40CFR 136. Currently, this is USEPA/600/4-90/003, July 1994. Later editions may replace this version.

**TABLE C 2**  
**CRITICAL LIFE STAGE TOXICITY TESTS FOR FRESH WATERS**

SPECIES REFERENCE	(Scientific name)	EFFECT	TEST DURATION	
fathead minnow	( <u>Pimephales promelas</u> )	survival; growth rate	7 days	6
water flea	( <u>Ceriodaphnia dubia</u> )	survival; number of young	7 days	6
alga	( <u>Selenastrum capricornutum</u> )	cell division rate	4 days	6

**Toxicity Test Reference:**

6. Horning, W.B. and C.I. Weber (eds.). 1989. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to freshwater organisms. Second edition. U.S. EPA Environmental Monitoring Systems Laboratory, Cincinnati, Ohio. EPA/600/4-89/001.

Novato Sanitary District  
NPDES Permit No. CA0037958  
Order No: R2-2004-0093

**Attachment D.**  
**Fact Sheet**

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**

**SAN FRANCISCO BAY REGION**

**1515 CLAY STREET, SUITE 1400**

**OAKLAND, CA 94612**

**(510) 622 - 2300 Fax: (510) 622 - 2460**

**FACT SHEET**

**for**

**NPDES PERMIT and WASTE DISCHARGE REQUIREMENTS for**

**NOVATO SANITARY DISTRICT**

**NOVATO, MARIN COUNTY**

**NPDES Permit No. CA0037958**

**ORDER NO. R2-2004-0093**

**PUBLIC NOTICE:**

**Written Comments**

- Interested persons are invited to submit written comments concerning this draft permit.
- Comments must be submitted to the Board no later than 5:00 p.m. on October 25, 2004.
- Send comments to the Attention of Ken Katzen.

**Public Hearing**

- The draft permit will be considered for adoption by the Board at a public hearing during the Board's regular monthly meeting at: Elihu Harris State Office Building, 1515 Clay Street, Oakland, CA; 1<sup>st</sup> floor Auditorium.
- This meeting will be held on: November 17, 2004, starting at 9:00 am.

**Additional Information**

- For additional information about this matter, interested persons should contact Regional Board staff member: Mr. Ken Katzen, Phone: (510) 622-2485; email: [kk@rb2.swrcb.ca.gov](mailto:kk@rb2.swrcb.ca.gov)

This Fact Sheet contains information regarding a reissuance of waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permit for the Novato Sanitary District for municipal wastewater discharges. The Fact Sheet describes the factual, legal, and methodological basis for the sections addressed in the proposed permit and provides supporting documentation to explain the rationale and assumptions used in deriving the effluent limitations.

## **I. INTRODUCTION**

- A. On November 24, 2003, the Novato Sanitary District (the Discharger), applied to the Board for reissuance of waste discharge requirements and a permit to discharge treated wastewater to waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES).
- B. The Discharger owns and operates two municipal wastewater treatment facilities (the Novato and Ignacio plants – collectively the WWTPs) with one combined effluent discharge outfall (E-003) to the intertidal mud flats of San Pablo Bay (the receiving water). The treatment facilities collect sanitary waste from a primarily residential service area serving the Novato area, with a current population of about 60,000. The combined outfall a shallow water discharge, and discharge is prohibited from June 1 through August 31, annually (the non-discharge season). During the non-discharge season, the WWTPs' effluent is reclaimed as described in Section III, below.
- C. The discharger presently discharges an average dry weather flow (ADWF) of 5.4 million gallons per day (MGD), from the WWTPs into San Pablo Bay, a water of the State and the United States.
- D. The Discharger's wastewater conveyance system transports wastewater flows from its service area to the WWTP through a series of gravity sewers and interceptors, pump stations, and force mains that are designed to handle peak wet weather flows. The combined conveyance and collection systems include about 200 miles of major trunk sanitary sewer lines, and 35 wastewater pump stations. The discharger has an ongoing program for preventive maintenance and capital improvements for these sewer lines and pump stations in order to ensure adequate capacity and reliability of the collection system.

## **II. TREATMENT PROCESS DESCRIPTION**

- A. The discharger owns and operates two municipal wastewater treatment facilities: the Ignacio plant, also designated E-001 and the Novato plant, also designated E-002.
- B. The Ignacio Treatment Plant (E-001) utilizes primary clarification, biofiltration, secondary clarification, nitrification, gravity filtration and disinfection with chlorine. The treatment processes vary depending on influent flow:

Design Dry Weather Flow (DDWF) Treatment with all unit processes  
(2.02 MGD), and wet weather  
flows up to 4.04 MGD

- C. The Novato Treatment Plant (E-002) utilizes primary clarification, activated sludge treatment, secondary clarification, nitrification, gravity filtration, and disinfection with chlorine. The treatment processes vary depending on influent flow. During high flow conditions, the Novato plant blends fully secondary treated wastewater with wastewater that has received primary treatment plus some degree of secondary treatment (see below). This blending is automatically controlled by preset weir

elevations and other, similar techniques. By January 1, 2005, the Discharger will have installed flow-sensing devices in the Novato plant so that blending events can be explicitly identified as they occur. The Discharger is also investigating the use of biochemical oxygen demand (BOD) and total suspended solids (TSS) as surrogate indicators to demonstrate that all effluent limits are met during blending events. The Ignacio plant does not currently blend.

DDWF, 4.53 MGD, and wet  
weather flows up to 9 MGD

Treatment with all unit processes

Wet weather flows between 9 MGD  
and 16 MGD

Primary treatment plus gravity filtration and  
disinfection

Wet weather flows above 16 MGD

Gravity filtration plus disinfection

- D. During the discharge season, the WWTPs discharge the treated, disinfected, and dechlorinated wastewater (the subject discharge) through one combined effluent outfall (E-003) to the intertidal mud flats of San Pablo Bay, a water of the State and the United States, adjacent to the former Hamilton Air Force Base. The treated wastewater is discharged through a multi-port diffuser about 950 feet offshore at Latitude 122 degrees 29 minutes 24 seconds, Longitude 38 degrees 03 minutes 36 seconds. The discharge diffuser is located in the intertidal zone and is submerged at the +1 foot Mean Lower Low Water (MLLW) tidal elevation and above. At tidal elevations lower than the +1 foot MLLW, the outfall is exposed and the distance from the end of the diffuser to the San Pablo Bay water line ranges from 1000 to 3500 feet, depending on tidal conditions. The quality of the discharge is depicted in Tables 1 and 2, below. Tables 1 and 2 depict only the constituents reported as detected in the monitoring data for the period October 1999 – April 2004.

Table 1. Effluent Discharge Description for Individual Plants (Oct 1999 – April 2004)

Parameter	Novato Plant		Ignacio Plant	
	Median	Maximum	Median	Maximum
Biochemical Oxygen Demand (BOD <sub>5</sub> ) (mg/L)	16	28	45.5	87
BOD <sub>5</sub> Monthly Removal (%)	95.4	99.0 <sup>[1]</sup>	91.7	97.6 <sup>[1]</sup>
Total Suspended Solids (TSS) (mg/L)	3.6	120	22	122
TSS Monthly Removal (%)	97.3	99.6 <sup>[1]</sup>	93.4	98.8 <sup>[1]</sup>
Settleable Solids (ml/l-hr)	0.05	0.8	0.05	0.8
Oil and Grease (mg/L)		8.0		8.0
Residual Chlorine (mg/L)	0.0	2.2	0.0	2.2 <sup>[2]</sup>
pH (s.u.)	7.9	8.5 <sup>[3]</sup>	7.1	10.1 <sup>[3]</sup>
Total coliform (mpn/100 ml)	3001	6000 <sup>[4]</sup>	3001	6000 <sup>[4]</sup>

Footnotes for Table 1.

[1] These values represent the maximum of monthly removal percentages for BOD and TSS.

[2] These values are for the combined effluent from both plants; individual plant effluent is not dechlorinated.

[3] This represents the maximum value for pH.

[4] This represents the maximum of the 5-sample moving median reported values.

Table 2. Effluent Discharge Description for Combined Discharge from Both Plants.

Parameter	Median	Maximum (ug/L)
Bis (2-Ethylhexyl) Phthalate	3.1	6.6
2,4,6-Trichlorophenol		2.5*
Bromodichloromethane	5.2	18
Chloroform	12.4	34.1
Dibromochloromethane	3.0	5.3
Toluene	0.6	1.2
MTBE	0.7	1.3
Diethyl Phthalate	9.2	0.8
Bromoform	0.3	0.4

\*Single detected value for 2,4,6-Trichlorophenol

- E. The U.S. Environmental Protection Agency (U.S. EPA) and the Board have classified this discharge as a major discharge.
- F. Both plants have primary anaerobic digesters for sludge digestion. The Novato plant has a secondary anaerobic digester, followed by storage ponds for thickening. The Ignacio plant's primary anaerobic digester is followed by storage ponds for thickening. The thickened sludge from both plants is applied on a 14.4 acre dedicated land disposal site at the reclamation area. Sludge storage and disposal are subject to regulation by the U.S. EPA pursuant to Title 40, Code of Federal Regulations, Part 503 (40 CFR Part 503)

### III. WATER RECLAMATION

- A. When not discharging to San Pablo Bay, the Discharger reclaims its treated wastewater pursuant to the reclamation requirements contained in Board Order No. 92-065. During the non-discharge season, the Discharger collects and holds the WWTPs' effluent in ponds for reclamation. Reclamation is carried out by sprinkler irrigation of 820 acres of Discharger-controlled pasturelands used for beef cattle grazing and irrigated hay production. The Discharger also uses its reclaimed water to maintain a wildlife management pond as required by Board Order No. 92-065. The Discharger is also subject, together with North Marin Water District, to the Board's Order No. 96-011, *General Water Reuse Requirements for Municipal Wastewater Agencies*.
- B. Although the formal discharge prohibition lasts for 3 months annually, the Discharger typically reclaims wastewater and irrigates five or more months per year. The non-discharge season is limited to three months because the combined outfall discharges to San Pablo Bay's intertidal area. The summer prohibition is limited to three months because the subject discharge, to San Pablo Bay's intertidal area, has a minimal impact immediately before and after the dry weather season because some dilution occurs, though less than 10 to 1, year round during most years.
- C. During the wet weather discharge period (November 1 through April 30), treated wastewater from the storage ponds may be discharged directly through the combined outfall, if it meets the requirements of the Discharger's Reclamation Pond Wet Season Discharge Sediment Control and

Monitoring Plan. This Plan was approved by the Executive Officer in October 1999 and is adequate to prevent entrainment of pond sediments into the discharge.

- D. The Discharger monitors the quality of water held in the reclamation ponds prior to discharge during the dry weather discharge period (May 1 – 31 and September 1 – October 31, annually).

#### IV. RECEIVING WATERS

- A. *Beneficial Uses.* Table 2-7 of the Board's June 21, 1995, *Water Quality Control Plan San Francisco Bay Basin (Region 2)* (the Basin Plan), and observation of known uses of the San Pablo Bay (the receiving water) in the vicinity of the subject discharge, have identified the following beneficial uses for San Pablo Bay:

- Commercial and Sport Fishing
- Estuarine Habitat
- Industrial Service Supply
- Fish Migration
- Navigation
- Preservation of Rare and Endangered Species
- Water Contact Recreation
- Non-contact Recreation
- Shell Fish Harvesting
- Fish Spawning
- Wildlife Habitat.

#### B. Salinity

1. The Basin Plan states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable Water Quality Objectives (WQOs). Freshwater objectives apply to discharges to waters that both lie outside the zone of tidal influence and have salinities lower than 5 parts per thousand (ppt) at least 75 percent of the time. Saltwater objectives shall apply to discharges to waters with salinities greater than 5 ppt at least 75 percent of the time. For discharges to waters with salinities in between the two categories or tidally influenced freshwaters that support estuarine beneficial uses, the objectives shall be the lower of the salt or freshwater objectives, the latter calculated based on ambient hardness, for each substance.
2. The U.S. EPA's May 18, 2000 *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (the California Toxics Rule – the CTR) states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable water quality criteria (WQCs). The CTR further states that freshwater criteria apply to discharges to waters with salinities equal to or less than one ppt at least 95 percent of the time. Saltwater criteria apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or to tidally influenced freshwaters that support estuarine beneficial uses, the criteria shall be the lower of the salt or freshwater criteria, the latter calculated based on ambient hardness, for each substance.



3. The receiving waters for the subject discharge are the waters of San Pablo Bay. The Basin Plan specifically identifies San Pablo Bay as estuarine [Basin Plan Table 2-6, pg. 2-21]. Therefore, the applicable WQCs or WQOs are the lower of the marine and freshwater WQOs or WQCs.

C. Hardness

Hardness-dependant WQOs/WQCs were adjusted using a hardness of 138 milligrams per liter (mg/l). This is the only relevant hardness value observed at the RMP San Pablo Bay monitoring station (designated BD 20) during the period from March 4, 1993 through July 17, 2000. Of the 22 total RMP samples collected at that station during that period, 7 samples were analyzed for hardness. Of those 7, 6 had hardness exceeding 400 mg/l. The CTR states [Section F.2.f - Hardness, page 31692], that criteria derivations are most accurate when hardness values are between 25 mg/L and 400 mg/L. Therefore, Board staff eliminated all hardness values above 400 mg/L, which left only the single value of 138 mg/L, observed on January 27, 1997. Since there is only a single applicable value, it was used as the ambient receiving water hardness.

D. Dilution.

1. The subject discharge does not receive an initial dilution of 10:1 at all times because the discharge diffuser is located in the intertidal zone in the San Pablo Bay mud flats, and is submerged when the tides is at the +1 foot Mean Lower Low Water (MLLW) tidal elevation and above. At lower tidal elevations, the outfall is exposed and the distance from the end of the diffuser to the San Pablo Bay water line can range from 1000 to 3500 feet.
2. The Discharger has conducted dilution studies using a dye study and water flow modeling. There are still outstanding technical issues regarding these studies (see Section IV.C.3, below). Therefore, consistent with the requirements of Section 1.3 of the State Water Resources Control Board's March 2, 2000 *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, this Order does not grant dilution credit for the subject discharge.
3. The outstanding technical issues regarding dilution studies include:
  - dye studies may not account for cumulative effects from other discharges.
  - they may not last long enough to fully assess whether a portion of the discharge has a long residence time and is not flushed out of the system, so that some portion – possibly a small part – of the discharge would make up part of the dilution water.
  - Based on the above, the assumption that a dye study measures only the initial dilution with “clean” dilution water may be incorrect because the actual dilution includes both “clean” dilution water and some amount of original discharge that resides in the system.
  - Neither models nor dye studies may have adequately considered the effects of other nearby discharge sources, or the cumulative effect of discharges from other major dischargers to San Francisco Bay system. Although these effects may be accounted for by factoring local background concentration in calculating the limitations, accurate characterization of local background levels is subject to uncertainties resulting from the interaction of tidal flushing and seasonal fresh water outflows described above.

4. The mixing zone is further limited for discharges of persistent pollutants because discharges to San Francisco Bay waters are not completely mixed discharges as defined by the SIP. Thus, the dilution credit should be determined using site-specific information for incompletely mixed discharges. The SIP Section 1.4.2.2 specifies that the Board "significantly limit a mixing zone and dilution credit as necessary... For example, in determining the extent of ... a mixing zone or dilution credit, the Board shall consider the presence of pollutants in the discharge that are ... persistent." The SIP defines persistent pollutants to be "substances for which degradation or decomposition in the environment is nonexistent or very slow." The pollutants at issue here are persistent pollutants (i.e. mercury, 4,4'-DDE, 4,4'-DDD, dieldrin, and heptachlor epoxide). The dilution studies that estimate actual dilution do not address the effects of these persistent pollutants in the Bay environment, such as their long-term effects on sediment concentrations.

## V. GENERAL RATIONALE AND REGULATORY BASES

Water quality objectives (WQOs), water quality criteria (WQC), effluent limitations, and calculations contained in this Order are based on:

- the Federal *Water Pollution Control Act*, Sections 301 through 305, and 307, and amendments thereto, as applicable (the Clean Water Act – the CWA);
- the Board's June 21, 1995 *Water Quality Control Plan San Francisco Bay Basin (Region 2)* (the Basin Plan), and amendments thereto, as subsequently approved by the State Water Resources Control Board (the State Board), the Office of Administrative Law (OAL) and the U.S. EPA;
- the State Water Resource Control Board's (the State Board's) March 2, 2000 *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the State Implementation Plan - the SIP), as subsequently approved by the OAL and the U.S. EPA;
- the U.S. EPA's May 18, 2000 *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (the California Toxics Rule – the CTR);
- the U.S. EPA's National Toxics Rule as promulgated [Federal Register Volume 57, 22 December 1992, page 60848] and subsequently amended (the NTR);
- the U.S. EPA's *Quality Criteria for Water* [EPA 440/5-86-001, 1986], and subsequent amendments, (the U.S. EPA Gold Book);
- applicable Federal Regulations [40 CFR Parts 122 and 131];
- 40 CFR Part 131.36(b) and amended [Federal Register Volume 60, Number 86, 4 May 1995, pages 22229-22237];
- the U.S. EPA's December 10, 1998 *National Recommended Water Quality Criteria* compilation [Federal Register Vol. 63, No. 237, pp. 68354-68364];
- the U.S. EPA's December 27, 2002 *Revision of National Recommended Water Quality Criteria* compilation [Federal Register Vol. 67, No. 249, pp. 79091-79095]; and

- guidance provided with State Board actions remanding permits to the Board for further consideration.

## VI. SPECIFIC RATIONALE

Specific factors affecting development of limitations and requirements in the proposed Order are discussed as follows:

### A. Recent Plant Performance

Section 402(o) of CWA and 40 CFR § 122.44(l) require a re-issued NPDES permit contain water quality-based effluent limitations (**WQBELs**) that are at least as stringent as those in the previous permit. The SIP specifies that interim performance-based effluent limitations, if required, must be based on the more stringent of either current treatment facility performance or previous permit limitations (unless anti-backsliding requirements are met). Board staff exercised BPJ, as defined above, to establish recent plant performance as it applies to the WWTPs. Board staff considered effluent monitoring data collected during the discharge season from October 1999 through April 2004 as representative of recent plant performance.

### B. Impaired Water Bodies in 303(d) List

On June 6, 2003, the U.S. EPA approved a revised list of impaired water bodies prepared by the State pursuant to the provision of Section 303(d) of the federal Clean Water Act (the 303(d) list) requiring identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. The 303(d) list includes San Pablo Bay as impaired by chlordane, DDT, diazinon, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, nickel, PCBs, dioxin-like PCBs, and selenium.

The SIP requires that final effluent limitations for all 303(d)-listed pollutants will be based on total maximum daily loads (**TMDLs**) and their associated wasteload allocations (**WLA**). The SIP and federal regulations also require that final concentration limitations be included for all pollutants with reasonable potential. The SIP requires that, where the Discharger has demonstrated infeasibility to meet the final limitations, interim concentration limitations will be established in the permit together with a compliance schedule to remain in effect until final effluent limitations are adopted. The SIP also requires the inclusion of appropriate provisions for waste minimization and source control as a condition for granting a compliance schedule.

### C. Basis for Prohibitions

1. Prohibition A.1 (no discharges other than as described in the permit): This prohibition is based on the California Water Code that requires filing of a report of waste discharge before a permit to discharge can be granted.
2. Prohibition A.2 (no bypass or overflow): This prohibition is based on the previous Order and 40 CFR Part 122.41(m)(4).
3. Prohibition A.3 (flow limit): This prohibition is based on the reliable treatment capacity of the plant. Exceedence of the treatment plant's average dry weather flow design capacity may result in lowering the reliability of compliance with water quality requirements, unless the Discharger

demonstrates otherwise through an antidegradation study. This prohibition is based on 40 CFR 122.41(l).

4. Prohibition A.4 (dry weather discharge): This prohibition is unchanged from the previous Order. The exception to the shallow water discharge prohibition is based on the Discharger's implementation of an approved reclamation program and, no discharge is allowed between June 1 and August 31, annually, when all treated wastewater is reclaimed.
5. Prohibition A.5 (no discharge of untreated or partially treated sewage, no discharge of disinfection products, such as chlorine.): This prohibition is based on the Clean Water Act, which prohibits discharges of wastewater that does not meet secondary treatment standards as specified in 40 CFR 133. Additionally, the Basin Plan prohibits discharge of raw sewage or any waste failing to meet waste discharge requirements to any waters of the Basin Plan. The Basin Plan contains a toxicity objective stating "All waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental responses to aquatic organisms." Chlorine is lethal to aquatic life.

#### D. Basis for Effluent Limitations

1. Effluent Limitations B.1: These technology-based and other limitations are representative of, and are intended to ensure, adequate and reliable secondary level wastewater treatment. During wet weather (November 1 - April 30 annually) the discharge is subject to the requirements for secondary plants that are at least as stringent as the Basin Plan requirements [Basin Plan Chapter 4, pg 4-8, and Table 4-2, at pg 4-69] and described by the U.S. EPA at 40 CFR 133.102. This Order requires that the discharge meet more stringent technology-based limits during dry weather (May 1 - 31 and September 1 - October 31 annually) to protect the beneficial uses of the receiving water from threats or impacts caused by the discharge. These more stringent dry weather technology based limits are needed because during the drier, warmer months, the receiving water is subject to greater oxygen demand from increased phytoplankton activity, there are reduced dissolved oxygen levels due to elevated temperature, and there is reduced flushing of San Pablo Bay from freshwater inflows (from local creeks or the Sacramento-San Joaquin Delta). Compliance at the Novato plant has been demonstrated by existing plant performance. The Ignacio plant has been unable to attain compliance with the more stringent technology-based dry weather limits, and is under a compliance schedule to attain them, and IPBLs until they can be achieved.
2. Effluent Limitation B.2 (pH): This effluent limitation is unchanged from the previous permit. The limitation is based on the Basin Plan [Basin Plan Chapter 4, Table 4-2], which is derived in turn from federal requirements [40 CFR 133.102]. Compliance has been demonstrated by existing plant performance.
3. Effluent Limitation B.3 (bacteriological). The previous Order included total coliform limitations. The U.S. EPA's May, 2002 draft implementation guidance for bacteriological water quality criteria recommended either enterococcus or *E. coli*, or both together, as superior to total or fecal coliform as bacteriological indicators for human health pathogenic risk. This recommendation was based on the fact that there are multiple sources of coliform bacteria, including humans, and research results showing that many of these forms are unrelated to human pathogens or risk potential. A growing number of studies (including the Santa Monica Bay study [R. Haile, et al. *The health effects of swimming in ocean water contaminated by storm drain runoff*. Epidemiology 10(4): 355-363 (1999).]) have indicated that enterococcus and/or *E. coli* counts

correlate more significantly than coliform counts with human health problems than coliform counts, and serve as a more accurate indicator of human health risk potential from water contact. Therefore, this Permit contains alternate enterococcus bacteriological limits. Enterococcus compliance may be demonstrated using any analytical method approved by the Executive Officer.

4. Effluent Limitation B.4 (chlorine residual): This effluent limit is unchanged from the previous NPDES permit. The limitation is based on the Basin Plan [Table 4-2, Pg. 4-69]. Compliance has generally been demonstrated by existing plant performance
5. Effluent Limitation B.5 (BOD and TSS monthly average 85 percent removal): These are standard secondary treatment requirements and permit effluent limitations based on Basin Plan requirements [Table 4-2, pg. 4-69], derived in turn from federal requirements [40 CFR 133.102; definition in 133.101]. These limitations are different from the previous NPDES permit in that they are based on concentration as the unit of measure, rather than weight. This change is implemented to make this requirement consistent with 40 CFR 133.101 and 133.102. Compliance has been demonstrated by existing plant performance.
6. Effluent Limitation B.6 (ammonia): The monthly effluent limitation is unchanged from the existing NPDES permit, and compliance has been demonstrated by existing plant performance. The annual average ammonia effluent limitation is discontinued because the Board feels that the monthly effluent limitation is adequately protective.
7. Effluent Limitation B.7 (Whole Effluent Acute Toxicity): The Basin Plan specifies a narrative objective for toxicity, requiring that all waters shall be maintained free of toxic substances in concentrations that are lethal to, or produce other detrimental response in, aquatic organisms. Detrimental responses include, but are not limited to: decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alternations in population, community ecology, or receiving water biota. These effluent toxicity limitations are necessary to ensure that this objective is protected. The whole effluent acute toxicity limitations for an eleven-sample median and an eleven-sample 90<sup>th</sup> percentile value are consistent with the previous Order and are based on the Basin Plan [Table 4-4, pg. 4-70]. This Order requires acute toxicity testing to be carried out consistent with the requirements of the U.S. EPA's "Methods for Measuring The Acute Toxicity of Effluents and Receiving Water To Freshwater and Marine Organisms." The most current requirements are the 5th Edition (EPA-821-R-02-012), and the Discharger shall implement succeeding editions as soon as practicable after their adoption by U.S. EPA.
8. Effluent Limitation B.8 (Whole Effluent Chronic Toxicity): The chronic toxicity objective/limitation is based on the Basin Plan's narrative toxicity objective on page 3-4.
9. Effluent Limitation B.9 (Toxic Substances):
  - a. Reasonable Potential Analysis (RPA)

The CFR [40 CFR 122.44(d)(1)(i)] requires NPDES permits to include WQBELs for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard" (have reasonable potential). Thus, assessing whether a pollutant has reasonable potential is the fundamental step in determining whether or not a WQBEL is required. The

following sections describe the process and results of an RPA of the WWTPs' effluent for the pollutants identified in the Basin Plan and the CTR.

- i) *WQOs and WQCs*: The RPA uses Basin Plan WQOs, including narrative toxicity objectives in the Basin Plan, and applicable WQCs in the CTR and NTR. The Basin Plan objectives and CTR/NTR criteria are shown in Attachment A of this Fact Sheet. Pursuant to SIP Section 1.3, the RPA did not include dilution for any pollutants, as discussed in Section IV.C, above.
  - ii) *Methodology*: The RPA uses the methods and procedures prescribed in SIP Section 1.3. Board staff analyzed the effluent and background data and the nature of facility operations to determine if the discharge has reasonable potential to cause or contribute to exceedences of applicable WQOs or WQCs. Attachment C of this Fact Sheet shows the step-wise process described in Section 1.3 of the SIP.
- b. *Effluent and background data*: The RPA is based on effluent data collected by the Discharger from October 1999 through April 2004 for metals and certain organic priority pollutants (see Attachment B of this Fact Sheet), and on receiving water ambient background data at RMP Station BD20 (the San Pablo Bay RMP station) from 1990 through 2000 as the most representative currently available background data. However, a data gap remains as to the ambient background conditions for the discharge into the intertidal mudflats of San Pablo Bay. San Pablo Bay station RMP data were used for this permit reissuance because this is the best available information representing ambient background condition for this discharge. The Discharger's outfall is located in the mudflats along the western edge of San Pablo Bay; and the San Pablo Bay RMP station is located in the center of San Pablo Bay. Therefore, there is significant distance from the discharge outfall to the RMP Station. For future permit reissuance, the Board may require better characterization of ambient background conditions near the outfall if such data are needed.
- c. *Site Specific Translators* This Order employs site-specific translators for the nickel and copper WQCs used in the RPA. The translators are derived from data presented in the Discharger's July 23, 2004, *Novato Sanitary District Copper and Nickel Translator Calculation* (the translator study), incorporated here by reference. The translator study compiled dissolved and total metal data from four monitoring stations in San Pablo Bay. The four monitoring stations used provide adequate geographic and temporal coverage for the portions of San Pablo Bay adjacent to the discharge. The study calculated translators using methods provided in U.S. EPA guidance, including direct calculation (translator = (dissolved fraction)/(total metal)), and performing a regression analysis of any correlation between translator values and Total Suspended Solids (TSS) in the receiving water. The regression analysis demonstrated an acceptable correlation between TSS and translator values for copper, but not for nickel. Therefore, for consistency, the directly computed translators were used for both copper and nickel. The RPA used site-specific translators for copper (0.73 acute, 0.39 chronic) and nickel (0.65 acute, 0.27 chronic).
- d. *RPA Triggers*: Three triggers apply in determining reasonable potential:
- 1) The first trigger is activated if the MEC is greater than the lowest applicable WQO ( $MEC \geq WQO$ ), which has been adjusted for pH and translator data, if appropriate. If the MEC is greater than the adjusted WQO, then that pollutant has reasonable potential, and a WQBEL is required.

- 2) The second trigger is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO ( $B > WQO$ ), and either:

- a) the MEC is less than the adjusted WQO ( $MEC < WQO$ ), or
- b) the pollutant was not detected in any of the effluent samples and all of the detection levels are greater than or equal to the adjusted WQO.

If B is greater than the adjusted WQO, then a QBEL is required.

- 3) The third trigger is activated under certain circumstances if a review of other information determines that a QBEL is required to protect beneficial uses, even if both MEC and B are less than the WQO.

- e. *RPA determination:* The RPA indicated that there is reasonable potential for: copper, lead, mercury, nickel, cyanide, TCDD TEQ, 4,4'-DDE, 4,4'-DDD, dieldrin, and heptachlor epoxide, as depicted in Table 2, below. A complete RPA results table is included in Attachment C of this Fact Sheet.

f. Summary of Reasonable Potential Results

CTR #	Constituent name	Governing Criterion, $\mu\text{g/l}$	RPA Trigger	Reason
6	Copper	6.58	1	$MEC \Rightarrow C$ [16.340 $\mu\text{g/l}$ vs 6.575 $\mu\text{g/l}$ ]
7	Lead	4.79	2	$B > C$ [6.460 $\mu\text{g/l}$ vs 4.794 $\mu\text{g/l}$ ]
8	Mercury (303d listed)	0.03	1	$MEC \Rightarrow C$ [0.046 $\mu\text{g/l}$ vs 0.025 $\mu\text{g/l}$ ]
9	Nickel	26.30	2	$B > C$ [30.000 $\mu\text{g/l}$ vs 26.296 $\mu\text{g/l}$ ]
14	Cyanide	1.00	1	$MEC \Rightarrow C$ [7.317 $\mu\text{g/l}$ vs 1.000 $\mu\text{g/l}$ ]
16	2,3,7,8 TCDD (303d listed)	0.00	3	RP by Trigger III and Staff BPJ
109	4,4'-DDE (linked to DDT)	0.00	2	$B > C$ [0.001159 $\mu\text{g/l}$ vs 0.000590 $\mu\text{g/l}$ ]
110	4,4'-DDD	0.00	2	$B > C$ [0.001159 $\mu\text{g/l}$ vs 0.000840 $\mu\text{g/l}$ ]
111	dieldrin (303d listed)	0.00	2	$B > C$ [0.000237 $\mu\text{g/l}$ vs 0.000140 $\mu\text{g/l}$ ]
118	heptachlor epoxide	0.00	2	$B > C$ [0.000121 $\mu\text{g/l}$ vs 0.000110 $\mu\text{g/l}$ ]

- g. *Constituents with limited data:* Reasonable potential could not be determined for some organic priority pollutants due to the lack of data. The Board's August 6, 2001 Letter to all permittees required the Discharger to initiate or continue to monitor for those pollutants in this category, using analytical methods that provide the best detection limits reasonably feasible. Table 6 of the SMP, requires two additional monitoring events for these pollutants before the Discharger applies for reissuance of this NPDES permit, and Board staff will reassess those pollutants RP at that time.

- h. *Permit reopener:* The permit includes a reopener provision to allow numeric effluent limitations to be added for any constituent that in the future exhibits reasonable potential to cause or contribute to exceedance of a WQO or WQCs. This determination, based on monitoring results, will be made by the Board.

- i. Mass Emission Limitations for Mercury

The Order contains a mass emission limitation for mercury because the Board has determined that there is no additional assimilative capacity for mercury in the San Francisco Bay system. This determination is consistent with SIP Section 2.1.1 requirements that the Board consider whether additional assimilative capacity exists for 303(d)-listed bioaccumulative pollutants. This determination also considered the fact that a fish consumption advisory currently exists to protect human health from elevated mercury concentrations in fish taken from San Francisco Bay. The mass trigger is calculated using the ultra-clean data collected from May 1999 through November 2003 as it reflects the WWTPs' performance. The mass trigger is a reflection of (1) better mercury effluent data (sampling and analytical techniques have improved); and (2) better flow data (43 months of actual effluent discharged to receiving water).

j. Final Water Quality-Based Effluent Limitations

Final WQBELs were developed for the toxic and priority pollutants that were determined to have reasonable potential. In this document, "final WQBELs" means final effluent limitations that were calculated based on appropriate WQOs or WQCs using the appropriate procedures specified in SIP Section 1.4 (See Attachment D of this Fact Sheet). For the purpose of the Proposed Order, final WQBELs refer to all non-interim effluent limitations. The governing WQOs or WQCs used for each pollutant with reasonable potential are depicted in Table 3, above. The determination of governing WQOs or WQCs is detailed in Attachment 1 of this Fact Sheet.

k. Comparison to Previous Permit Limitations

The effluent limitations contained in the existing NPDES permit for silver and zinc have been discontinued because the current RPA indicated they do not have reasonable potential, and therefore, no final WQBELs are required. Their discontinuation is exempt from antibacksliding and antidegradation, to the extent they would be applicable, because the current RPA constitutes new information that was not available when the existing NPDES permit was adopted, and the receiving water is in attainment for silver and zinc. The interim performance based effluent limit (IPBL) for copper contained in this NPDES permit is more stringent than the interim limit contained in the existing NPDES permit. For mercury, the concentration-based IPBL and mass emission limits are based on the previous NPDES permit, as amended. The mercury mass trigger was recalculated based on recent plant performance data, as depicted in Attachment 5. The IPBL for cyanide is higher than that contained in the existing NPDES permit because new information (i.e., results of collaborative cyanide studies) has become available since the existing NPDES permit was adopted. The existing NPDES permit did not include effluent limitations for 4,4'-DDE, 4,4'-DDD, dieldrin or heptachlor epoxide, and they are included in this Order because the RPA indicated they have reasonable potential due to ambient background levels in the receiving water.

l. Feasibility of Complying With Final Limitations for Lead and Nickel

Board staff conducted a statistical analysis of lead and nickel data for wet weather discharge of combined effluent to evaluate the feasibility of attaining immediate compliance with the final WQBELs. The statistical analysis computed the median, 95<sup>th</sup> percentile, and 99.87<sup>th</sup> percentile values of the data, as depicted in Attachments 6 and 7. The statistical analysis shows that the median, 95<sup>th</sup> percentile, and 99.87<sup>th</sup> percentile values are all below the MDELs for both lead and nickel. This indicates that immediate compliance with those final WQBELs is feasible.



m. Interim Limitations

- i) Pursuant to the SIP, this Order establishes numeric IPBLs for copper, cyanide, mercury, 4,4'-DDE, dieldrin, and heptachlor epoxide. Both the SIP and the Basin Plan require dischargers to demonstrate the infeasibility of achieving immediate compliance with new limits to qualify for a compliance schedule. On July 27, 2004, the Discharger submitted its Feasibility Study (the feasibility study), asserting infeasibility to immediately comply with the final WQBELs for copper, mercury, cyanide, 4,4'-DDE, 4,4'-DDD, dieldrin and heptachlor epoxide. Board staff have analyzed the Discharger's data for copper, mercury, and cyanide and confirmed the assertion of infeasibility for those pollutants. For 4,4'-DDE, 4,4'-DDD, dieldrin and heptachlor epoxide, current analytical technologies do not permit detection of those compounds, if present, at levels low enough to determine compliance with the final WQBELs, and the assertion of infeasibility is confirmed for those pollutants. Interim effluent limitations were derived for these constituents.
- ii) Justification for including these IPBLs is based partly on the Discharger's source control and pollution minimization efforts in the past and continuation of those efforts in the present and future. The interim effluent concentration limitations for copper and cyanide are based on recent plant performance. The interim monitoring requirement for dioxin TEQ is based on the previous permit daily average effluent limitations. The concentration-based mercury IPBL is based on the 2001 Board staff report *Statistical Analysis of Pooled Data from Regionwide UltraClean Mercury Sampling for Municipal Dischargers*. The mass-based IPBL is continued from the existing NPDES permit, and the mass-based mercury triggers are recomputed from recent plant performance, and are consistent with anticipated WLAs for the mercury TMDL. The interim limitations for 4,4'-DDE, 4,4'-DDD, dieldrin, and heptachlor epoxide are based on their respective MLs as set out in the SIP [pages 4-1 through 4-5]. The interim limitations are also discussed in more detail below.

n. Feasibility Evaluation

- i) Board staff reviewed the feasibility study's assertions that it is infeasible to immediately comply with the WQBELs calculated according to SIP Section 1.4 for copper, mercury, cyanide, 4,4'-DDE, dieldrin, and heptachlor epoxide.
- ii) Board staff statistically analyzed recent WWTP copper and mercury performance data to validate the assertion of infeasibility for them, as depicted in Table 4, below. Based on that statistical analysis, the Board concurs with the Infeasibility study's assertion of infeasibility regarding copper and mercury. Therefore, pursuant to SIP requirements, this Order continues the existing compliance schedules for copper and mercury and establishes interim numeric limitations and interim requirements to control these metals, based on the specific bases described below.

Table 3. Results of feasibility analysis for copper and mercury.

Constituent	AMEL, µg/L	95 <sup>th</sup> Percentile, µg/L	MDEL, µg/L	99 <sup>th</sup> Percentile, µg/L	Immediate Compliance Feasible? (Y/N)
Copper	4.4	18.7	6.4	15.6	No
Mercury*	0.021	0.036	0.039	0.048	No

- iii) This Order establishes an interim performance-based mercury mass limit in addition to the interim mercury concentration limits, to maintain the discharge's current mass loadings of mercury, a 303(d)-listed bioaccumulative pollutant, into San Pablo Bay. This interim performance-based mass limitation is based on the existing NPDES permit.
  - iv) Specific bases for these interim limits are described in the findings for each pollutant and in Section m., below. The Board may take appropriate enforcement actions if interim limits and requirements are not met.
  - v) This Order requires continued monitoring for cyanide and selected semivolatiles as a condition of establishing the interim numeric interim limits and compliance schedules for them.
- o. Further Discussion and Rationales of Interim Effluent Limitations
- i) Copper: This Order contains a copper IPBL because the Discharger has demonstrated and the Board verified that it is infeasible for the WWTPs to meet the final effluent limitations calculated according to the SIP, 6.4 µg/L maximum daily effluent limit (MDEL) and 4.4 µg/L average monthly effluent limit (AMEL). The SIP requires the interim numeric effluent limitation for the pollutant be based on either current treatment facility performance, or on the previous Order's limitation, whichever is more stringent. Board staff's statistical analysis indicates the 99.87<sup>th</sup> percentile value of the WWTPs' recent copper effluent data is 19 µg/L, which is lower than the 22 µg/L IPBL developed for the current NPDES Permit. Therefore, this Order establishes the copper IPBL as 19 g/L. To comply with the SIP, this Order establishes the IPBL at 19 µg/L as a daily maximum.
  - ii) Mercury: This Order contains a mercury IPBL because the Discharger has demonstrated and the Board verified that it is infeasible for the WWTPs to meet the final effluent limitations calculated according to the SIP, 0.039 µg/L MDEL and 0.021 µg/L AMEL. The SIP requires the interim numeric effluent limitation for the pollutant be based on either current treatment facility performance, or on the previous Order's limitation, whichever is more stringent. The SIP requires the interim numeric effluent limitation for the pollutant be based on either current treatment facility performance, or on the previous Order's limitation, whichever is more stringent. The performance-based effluent limitations, 0.023 µg/L for advanced secondary treatment plants and 0.087 µg/L for secondary treatment plants, were calculated statistically using ultra-clean mercury concentration data (*Staff Report: Statistical Analysis of Pooled Data from Region-wide Ultra-clean Sampling, 2000*). The Discharger operates secondary treatment plants, so the appropriate concentration-based mercury IPBL is 0.087 µg/L. This is the same concentration-based IPBL contained in the existing NPDES permit.

This Order continues the previous NPDES permit's interim mass-based mercury effluent limitation of 0.655 kilograms per year (kg/yr), and establishes a newly-calculated interim mass-based mercury trigger value of 0.020 kilograms per month (kg/mo). The trigger value is based on a statistical analysis of recent plant performance. Specifically, the running 12-month mass loading averages for the WWTPs were calculated for the period October 1999 through April 2004, and the 99.87<sup>th</sup> percentile value of the running 12-month average mass loadings was calculated, as shown in Attachment 5 of this Fact Sheet. This value is the

interim mass-based mercury trigger. The Board has determined that this mass-based trigger approach is appropriate for the following reasons:

- a. recent monitoring data show very low levels of mercury in the discharge, well below the applicable WQC,
- b. the interim concentration-based limitation will ensure that mercury levels remain low in the discharge,
- c. the Discharger will continue to identify and, to the extent feasible, address mercury sources under its pollution prevention program,
- d. the interim mass limitation based on the design flow will preclude any significant increases in mass loadings from the WWTP.

Overall, the Discharger already has minimized mercury influent loadings to the treatment plant and provided for a high level of mercury removal in the treatment process. The Board anticipates that it is unlikely that the TMDL will require additional reductions in mercury loadings beyond current treatment levels.

- iv) Cyanide: An interim effluent limitation is given for cyanide since the Discharger has demonstrated and the Board verified that it is infeasible for the WWTPs to meet the final effluent limitations calculated according to the SIP (AMEL and MDEL of 1.0) or the current SIP minimum level of 5.0 µg/l. The final WQBEL may be recalculated based on a cyanide SSO. Since the Discharger cannot comply with the cyanide WQBELs or ML, this Order establishes an IPBL for cyanide, based on the 99.87<sup>th</sup> percentile value of recent performance data. Statistical analysis of recent cyanide effluent data indicates a 99.87<sup>th</sup> percentile value of 9.2 µg/L. This Order establishes the 9.2 µg/L cyanide IPBL, even though it is higher than the previous NPDES Permit's 5µg/L limit, because antibacksliding does not apply for the following reasons:

- 1) The proposed final WQBEL set forth in the findings is more stringent than the WQBEL specified in the previous permit,
- 2) As set forth in the State Board Order WQ 2001-06, antibacksliding does not apply to the interim limitations in a compliance schedule and the proposed interim *performance-based* limit is not "comparable" to the prior *water quality*-based limit of the previous permit, and
- 3) Even if antibacksliding and antidegradation policies apply to interim limitations under CWA 402(o)(2)(c), a less stringent limitation is necessary because of factors over which the Discharger has no control – specifically, the fact that cyanide appears to be byproduct of the required effluent disinfection.

- iii) 4,4'-DDE, 4,4'-DDD, dieldrin and Heptachlor: Interim effluent limitations are given for these pollutants because it is infeasible for the Discharger to demonstrate, or the Board to

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<sup>1</sup> The SIP defines "infeasible" as follows: "... not capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and *technological* factors." SIP, Appendix 1-3 (emphasis added).

determine, immediate compliance with the final WQBELs (4,4'-DDE: MDEL -0.00059 µg/L, AMEL - 0.00029 µg/L; 4,4'-DDD: MDEL - 0.00169, AMEL - 0.00084; dieldrin: MDEL - 0.00029 µg/L, AMEL - 0.00014 µg/L; and heptachlor Epoxide: MDEL - 0.00022 µg/L and AMEL - 0.00011 µg/L.) newly calculated in accordance with the SIP. This is because all effluent samples are non-detect and the detection limits are far above the WQBELs. Since the Discharger cannot immediately demonstrate compliance with the final limits, the interim limitations are set at current performance, which is the levels at which the Discharger can demonstrate compliance, the current method limits (MLs) as delineated in the SIP: 4,4'-DDE- 0.05 µg/L, 4,4'-DDD - 0.0g µg/L, dieldrin - 0.01 µg/L and heptachlor epoxide - 0.01 µg/L. These IPBLs are taken as daily maximums. Because the previous NPDES permit did not contain limits for 4,4'-DDE, 4,4'-DDD, dieldrin and heptachlor, antibacksliding does not apply to these interim limits.

- v) Dioxins and Furans: The Discharger has demonstrated, and the Board verified, that it is infeasible for the Discharger to achieve immediate compliance with the final WQBELs for dioxin and furan compounds (AMEL of 0.014 pg/L and MDEL of 0.028 pg/L) newly calculated in accordance with the SIP. However, this Order does not contain interim limits for dioxins and furans because the current method detection limits are far above the final effluent limits. Although the SIP does not contain minimum levels for dioxins and furan compounds, Section 2.4.3 (1.) of the SIP requires the Board to establish an ML in the discharger's permit if the SIP's Appendix 4 does not contain an ML for the pollutant under. Therefore, this Order requires the Discharger to investigate the feasibility and reliability of increasing sample volumes to lower the detection limits for dioxin and furan compounds.
- p. Attainability of Interim Limitations
  - i) Copper: During the period October 1999 through April 2004, the WWTPs' effluent MEC for copper was 16.34 µg/L. Since all effluent copper values were below the 19 µg/L IPBL, it is feasible for the WWTPs to comply with the IPBL.
  - ii) Mercury: During the period May 1999 through April 2004, the Discharger's combined effluent mercury concentrations ranged from 0.008 µg/L to 0.101 µg/L and averaged 0.021 µg/L. Although the mercury MEC exceeds the IPBL, Board staff's evaluation of the subject discharge data indicate that the concentration-based IPBL is attainable. During that same time period, the 12-month moving average mercury mass emissions ranged from 0.16 kg/yr (0.013 kg/mo) to 0.23 kg/yr (0.019 kg/mo). Based on these results, the annual average mass loading limit and trigger values should be attainable by the WWTPs.
  - iv) Cyanide - During the period November 1998 through December 2002, the MEC for cyanide was 7.3 µg/L. Board staff's evaluation of the subject discharge data indicates that it is feasible for the WWTP to comply with the 9.2 µg/L IPBL.
  - v) 4,4'-DDE, 4,4'-DDD, dieldrin and heptachlor epoxide - None of these compounds were detected in samples collected from the WWTPs' effluent in the period October 1999 - April 2004. The lowest detection limits for those samples were all below the relevant MLs, indicating the Discharger can comply with the IPBLs.

#### **F. Basis for Receiving Water Limitations**

1. Receiving water limitations C.1, C.2, and C.3 (conditions to be avoided): These limitations are based on the narrative/numerical objectives contained in Chapter 3 of the Basin Plan, pages 3-2 – 3-5.
2. Receiving water limitation C.4 (compliance with State Law): This requirement is in the previous permit, requires compliance with Federal and State law, and is self-explanatory.
3. Receiving water limitation C.5 (treatment plant operation): This requirement is in the previous permit, requires compliance with Federal and State law, and is self-explanatory.

#### **G. Basis for Sludge Management Practices**

These requirements are based on Table 4.1 of the Basin Plan and 40 CFR 503.

#### **H. Basis for Self-Monitoring Requirements**

The SMP includes monitoring at individual plants' discharge points for conventional pollutants and at the combined outfall for non-conventional and toxic pollutants, and acute and chronic toxicity. The monitoring frequency for TSS is maintained at three (3) times per week since the Board believes that daily performance monitoring is appropriate for major POTWs. The Basin Plan Amendment adopted by the Board on January 21, 2004, (the Amendment) removed the settleable matter effluent limitations for secondary sewage treatment plants because it was not an appropriate indicator of sewage treatment plants' performance. Although the Amendment does not become effective until it is approved by the Office of Administrative Law, this Order does not impose settleable matter limits, based on the same rationale as the Amendment's removal of them. Should this change not be approved by the Office of Administrative Law, the Board will amend this Order to reinstate the settleable matter limits, as appropriate. This Order requires monthly monitoring for copper, mercury and cyanide to demonstrate compliance with the IPBLs. This Order requires monthly monitoring for lead and nickel to demonstrate compliance with final effluent limitations. Additionally, this Order requires twice yearly monitoring for 4,4'-DDE, 4,4'-DDD, dieldrin, heptachlor epoxide and dioxins and furan compounds to determine compliance with effluent limitations since these pollutants have little data with either limited or no detected values in the effluent during the period October 1999 through April 2004. Moreover, the Discharger shall collect twice yearly monitoring for all the 2,3,7,8-TCDD congeners, as further explained under the heading **Basis for the Lower Detection Limit Study for Dioxin TEQ**.

#### **I. Basis for Provisions**

- i) Provision E.1. (Permit Compliance and Rescission of Previous Permit): Time of compliance is based on 40 CFR 122. The basis of this Order superceding and rescinding the previous permit Order is 40 CFR 122.46.
- ii) Provision E.2 (Regional Copper Study and Schedule): This provision, based on BPJ, requires the Discharger to continue its participation in the regional discharger-funded effort to develop site-specific saltwater aquatic life-based WQOs for copper in San Francisco Bay north of the Dumbarton Bridge.
- iii) Provision E.3 (Cyanide Compliance Schedule and Cyanide SSO Study): This provision, based on BPJ, requires the Discharger to characterize background ambient cyanide concentrations and to participate in an on-going group effort to develop an SSO for cyanide.

- iv) Provision E.4 (Pollution Prevention and Pretreatment Program): This provision is based on the Basin Plan, pages 4-25 – 4-28, and the SIP, Section 2.1.
- v) Provision E.5 (Pretreatment Program): This provision is based on 40 CFR Part 403.
- vi) Provision E.6 (Whole Effluent Acute Toxicity): This provision establishes conditions by which compliance with permit effluent limitations for acute toxicity will be demonstrated. Under this Order, the Discharger is required to use the most up-to-date protocols in 40 CFR Part 136, currently in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms," 5<sup>th</sup> Edition
- vi) Provision E.7 (Whole Effluent Chronic Toxicity): This provision establishes conditions and protocols by which compliance with the Basin Plan narrative WQO for toxicity will be demonstrated. Conditions include required monitoring and evaluation of the effluent for chronic toxicity and numerical values for chronic toxicity evaluation to be used as 'triggers' for initiating accelerated monitoring and toxicity reduction evaluation(s). This provision also requires the Discharger to conduct a screening phase monitoring requirement and implement toxicity identification and reduction evaluations when there is consistent chronic toxicity in the discharge. New testing species and/or test methodology may be available before the next permit renewal. Characteristics, and thus toxicity, of the process wastewater may also have been changed during the life of the permit. This screening phase monitoring is important to help determine which test species is most sensitive to the toxicity of the effluent for future compliance monitoring. The proposed conditions in the draft permit for chronic toxicity are based on the Basin Plan narrative WQO for toxicity, Basin Plan effluent limitations for chronic toxicity (Basin Plan, Chapter 4), the U.S. EPA and SWRCB Task Force guidance, applicable federal regulations [40 CFR 122.44(d)(1)(v)], and BPJ.
- vii) Provision E.8 (Whole Effluent Chronic Toxicity): This provision establishes conditions and protocols by which compliance with the Basin Plan narrative WQO for toxicity will be demonstrated. Conditions include required monitoring and evaluation of the effluent for chronic toxicity and numerical values for chronic toxicity evaluation to be used as 'triggers' for initiating accelerated monitoring and toxicity reduction evaluation(s). This provision also requires the Discharger to conduct a screening phase monitoring requirement and implement toxicity identification and reduction evaluations when there is consistent chronic toxicity in the discharge. New testing species and/or test methodology may be available before the next permit renewal. Characteristics, and thus toxicity, of the process wastewater may also have been changed during the life of the permit. This screening phase monitoring is important to help determine which test species is most sensitive to the toxicity of the effluent for future compliance monitoring. The proposed conditions in the draft permit for chronic toxicity are based on the Basin Plan narrative WQO for toxicity, Basin Plan effluent limitations for chronic toxicity (Basin Plan, Chapter 4), the U.S. EPA and SWRCB Task Force guidance, applicable federal regulations [40 CFR 122.44(d)(1)(v)], and BPJ.
- viii) Provision E.8 (Advanced Mercury Source Reduction Project): This provision, requires the Discharger to implement an Advanced Mercury Source Control Program throughout its service area that will within the first three years of the program increase the collection of fluorescent light tubes 5%. This provision is based on Section 2.1.1 of the SIP.
- ix) Provision E.9. (Bacteriological Studies): Consistent with the Basin Plan and U.S. EPA guidance, this provision requires the Discharger to conduct a confirmation study to demonstrate

that the enterococcus limitations included in the Order are protective of all of the designated uses of the receiving waters, and must verify the "light contact" recreational use scenario upon which the limitations are based.

- x) Provision E.10 (Reclamation Pond Operation): The provision implements the sampling requirements in the Discharger's Reclamation Pond Wet Season Discharge Sediment Control Monitoring Plan.
- xi) Provision E.11. (Compliance Schedule for Conventional Effluent Limitations at Ignacio Plant): The Ignacio Plant is currently unable to attain the technology-based effluent limitations for BOD and TSS for discharge during the dry-weather season (May, September, and October annually). The Discharger has committed to upgrade or replace the Ignacio Plant so that the more stringent dry weather technology-based effluent limitations will be attained. This Order continues the previous NPDES permit's compliance schedule, until March 31, 2008.
- xii) Provision E.12. (303(d)-listed Pollutants Site-Specific Objective and TMDL Status Review): Consistent with the SIP, the Discharger shall participate in the development of TMDLs and SSOs for mercury, selenium, 4,4'-DDE, dieldrin, dioxin, and PCBs. By January 31 of each year, the Discharger shall submit an update to the Board to document progress made on source control and pollutant minimization measures and development of TMDL or SSO. Regional Board staff shall review the status of TMDL development. This Order may be reopened in the future to reflect any changes required by TMDL development.
- xiii) Provision E.13. (Optional mass Offset): This option is provided to encourage the Discharger to further implement aggressive reduction of mass loads to San Pablo Bay.
- xiv) Provision E.14 (Sanitary Sewer Management Plan): This provision requires the Discharger to actively participate in the BACWA and Water Board collaborative effort to address SSOs. The effort is consistent with Board Resolution No: R2-2003-0095.
- xv) Provision E.15 (Blending Monitoring Study). This provision is based on BPJ. It requires the Discharger to evaluate TSS as an indicator of compliance with effluent limitations during blending events. Furthermore, the provision requires the Discharger to recommend an appropriate TSS trigger value. The TSS trigger value will be used to require additional monitoring (Table 2 and Table 3 of the SMP) during blending events.
- xvi) Provision E.16 (Implementation and Enforcement of Prohibition A.5): The provision is based on 40 CFR 122.41(n) regarding treatment plant upset and affirmative defense.
- xvii) Provision E.17. (Wastewater Facilities, Review and Evaluation, Status Reports): This provision is based on the previous Order and the Basin Plan.
- xviii) Provision E.18. (Operations and Maintenance Manual and Reliability Report), and E.19 (Contingency Plan Update): These provisions are based on the Basin Plan, the requirements of 40 CFR 122, and the previous permit.
- xix) Provision E.20. (Self-Monitoring Program): The Discharger is required to conduct monitoring of the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are contained in the Self Monitoring Program (SMP) of the Permit. This provision requires compliance with the SMP, and is based on 40 CFR 122.44(i), 122.62, 122.63 and

124.5. The SMP is a standard requirement in almost all NPDES permits issued by the Board, including this Order. It contains definitions of terms, specifies general sampling and analytical protocols, and sets out requirements for reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Board's policies. The SMP also contains a sampling program specific for the facility. It defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs for them.

- xx) Provision E.21 (Standard Provisions and Reporting Requirements): The purpose of this provision is require compliance with the standard provisions and reporting requirements given in this Board's document titled *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993* (the Standard Provisions), or any amendments thereafter. That document is incorporated in the permit as an attachment to it. Where provisions or reporting requirements specified in the permit are different from equivalent or related provisions or reporting requirements given in the Standard Provisions, the permit specifications shall apply. The standard provisions and reporting requirements given in the above document are based on various state and federal regulations with specific references cited therein.
- xxi) Provisions E.22 (Change in Control or Ownership): This provision is based on 40 CFR 122.61.
- xxii) Provision E.23 (Permit Reopener): This provision is based on 40 CFR 123.
- xxiii) Provision E.24 (NPDES Permit /the U.S. EPA concurrence): This provision is based on 40 CFR 123.
- xxiv) Provisions E.25 (Permit Expiration and Reapplication): This provision is based on 40 CFR 122.46(a).

#### **IV. WASTE DISCHARGE REQUIREMENT APPEALS**

Any person may petition the State Water Resources Control Board to review the decision of the Board regarding the Waste Discharge Requirements. A petition must be made within 30 days of the Board public hearing.

#### **V. ATTACHMENTS**

- Attachment 1. RPA Results for Priority Pollutants
- Attachment 2. Data Used For Reasonable Potential Analysis
- Attachment 3. Results of Reasonable Potential Analysis
- Attachment 4. Calculation of Final WQBELs
- Attachment 5. Mercury Mass Limit Calculations



# **Determination of Governing WQOs and WQCs**

## **Attachment 1.**

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Basin Plan Objectives (ug/L) Region Basin Plan Criteria										CTR Water Quality Criteria (ug/L)									
# in CTR	PRIORITY POLLUTANTS	Lowest (most stringent) Criteria <sup>a</sup> ug/L	Human Health Criterion ug/L	Lowest Chronic Criterion ug/L	Lowest Acute Criterion ug/L	from Table 4.3		Freshwater Table 3-4			Saltwater Table 3-3			Freshwater		Saltwater		Human Health for consumption of:	
						Shallow Water (2-4-in) ug/L	Deep Water (2-4-in) ug/L	4-day ug/L	1-hr ug/L	24-hr ug/L	Inst. Max ug/L	4-day ug/L	1-hr ug/L	24-hr ug/L	Inst. Max ug/L	CMC (acute) ug/L	CCC (chronic) ug/L	CMC (acute) ug/L	CCC (chronic) ug/L
42	1,1,2-Trichloroethane	42	42.00000																42
43	Trichloroethylene	81	81.00000																81
44	Vinyl Chloride	525	525.00000																525
45	Chlorophenol	400	400.00000																400
46	2,4-Dichlorophenol	790	790.00000																790
47	2,4-Dimethylphenol	2300	2300.00000																2,300
48	2-Methyl-4,6-Dinitrophenol	765	765.00000																765
49	2,4-Dinitrophenol	14000	14000.00000																14,000
50	2-Nitrophenol	No Criteria																	
51	4-Nitrophenol	No Criteria																	
52	3-Methyl-4-Chlorophenol	No Criteria																	
53	Pentachlorophenol	7.9	8.20000	7.90000	13.00000										19	15	13	7.9	8.2
54	Phenol	4600000	4600000.00000																4,600,000
55	2,4,6-Trichlorophenol	6.5	6.50000																6.5
56	Acenaphthene	No Criteria	2700	2700.00000															2,700
57	Acenaphthylene	No Criteria																	
58	Anthracene	110000	110000.00000																110,000
59	Benzidine	0.00054	0.00054																0.00054
60	Benzofluoranthene	0.049	0.04900																0.049
61	Benzofluoranthene	0.049	0.04900																0.049
62	Benzofluoranthene	0.049	0.04900																0.049
63	Benzofluoranthene	No Criteria																	
64	Benzofluoranthene	0.049	0.04900																0.049
65	Bis(2-Chloroethoxy)Methane	No Criteria																	
66	Bis(2-Chloroethoxy)Methane	1.4	1.40000																1.4
67	Bis(2-Chloroisopropyl)Ether	170000	170000.00000																170,000
68	Bis(2-Ethylhexyl)Phthalate	5.9	5.90000																5.9
69	4-Bromophenyl Phenyl Ether	No Criteria																	
70	Butylbenzyl Phthalate	5200	5200.00000																5,200
71	2-Chloronaphthalene	4300	4300.00000																4,300
72	4-Chlorophenyl Phenyl Ether	No Criteria																	
73	Chrysene	0.049	0.04900																0.049
74	Dibenzofluoranthene	0.049	0.04900																0.049
75	1,2-Dichlorobenzene	17000	17000.00000																17,000
76	1,3-Dichlorobenzene	2600	2600.00000																2,600
77	1,4-Dichlorobenzene	2600	2600.00000																2,600
78	3,3-Dichlorobenzidine	0.077	0.07700																0.077
79	Diethyl Phthalate	120000	120000.00000																120,000
80	Dimethyl Phthalate	2900000	2900000.00000																2,900,000
81	Di-n-Butyl Phthalate	12000	12000.00000																12,000
82	2,4-Dinitrotoluene	9.1	9.10000																9.1
83	2,6-Dinitrotoluene	No Criteria																	
84	Di-n-Octyl Phthalate	No Criteria																	
85	1,2-Diphenylhydrazine	0.54	0.54000																0.54
86	Fluoranthene	370	370.00000																370
87	Fluorene	14000	14000.00000																14,000
88	Hexachlorobenzene	0.00077	0.00077																0.00077
89	Hexachlorobutadiene	50	50.00000																50

		Basin Plan Objectives (ug/L) - Region										CTR Water Quality Criteria (ug/L)													
# in CTR	PRIORITY POLLUTANTS	Lowest (most stringent) Criteria <sup>a</sup> ug/L	Human Health Criterion ug/L		Lowest Chronic Criterion ug/L		Lowest Acute Criterion ug/L		from Table 4-3		Freshwater Table 3-4				(from Saltwater Table 3-3)				Freshwater		Saltwater		Human Health for consumption of:		
			ug/L	ug/L	ug/L	ug/L	Shallow Water (24-hr) ug/L	Deep Water (24-hr) ug/L	4-day ug/L	1-hr ug/L	24-hr ug/L	Inst. Max ug/L	4-day ug/L	1-hr ug/L	24-hr ug/L	Inst. Max ug/L	CMC (acute) ug/L	CCC (chronic) ug/L	CMC (acute) ug/L	CCC (chronic) ug/L	Water & organisms ug/L	Organisms only ug/L			
90	Hexachlorocyclopentadiene	17000		17000.00000																				17,000	
91	Hexachloroethane	8.9		8.90000																					8.9
92	Indeno(1,2,3-cd) Pyrene	0.049		0.04900																					0.049
93	Isophorone	600		600.00000																					600
94	Naphthalene	No Criteria																							
95	Nitrobenzene	1900		1900.00000																					1,900
96	N-Nitrosodimethylamine	8.1		8.10000																					8.1
97	N-Nitrosodi-n-Propylamine	1.4		1.40000																					1.4
98	N-Nitrosodiphenylamine	16		16.00000																					16
99	Phenanthrene	No Criteria																							
100	Pyrene	11000		11000.00000																					11,000
101	1,2,4-Trichlorobenzene	No Criteria																							
102	Aldrin	0.00014		0.00014				1.30000																	0.00014
103	alpha-BHC	0.013		0.01300																					0.013
104	beta-BHC	0.046		0.04600																					0.046
105	gamma-BHC	0.063		0.06300				0.16000																	0.063
106	delta-BHC	No Criteria																							
107	Chlordane	0.00059		0.00059				0.09000																	0.00059
108	4,4-DDT	0.00059		0.00059				0.13000																	0.00059
109	4,4-DDE	0.00059		0.00059																					0.00059
110	4,4-DDD	0.00084		0.00084																					0.00084
111	Dieldrin	0.00014		0.00014				0.24000																	0.00014
112	alpha-Endosulfan	0.0087		240.00000				0.03400																	240
113	beta-Endosulfan	0.0087		240.00000				0.03400																	240
114	Endosulfan Sulfate	240		240.00000																					240
115	Endrin	0.0023		0.81000				0.03700																	0.81
116	Endrin Aldehyde	0.81		0.81000																					0.81
117	Heptachlor	0.00021		0.00021				0.05300																	0.00021
118	Heptachlor Epoxide	0.00011		0.00011				0.05300																	0.00011
119-125	PCBs sum (2)	0.00017		0.00017																					0.00017
126	Toxaphene	0.0002		0.00020				0.21000																	0.0002
	Tributyltin	0.01		0.01000																					0.01
	Total PAHs	15		15.00000																					15
Notes:																									
(2)	PCBs sum refers to sum of PCBs 1016, 1221, 1232, 1242, 1248, 1254, and 1260																								



**Attachment 2**  
**Data Used For Reasonable Potential Analysis**

CTR No.	Constituent name	Effluent Data Available (Y/N)?	Are all data points non- detects (Y/N)?	Effluent max conc (ug/L)	Enter the effluent detected max conc (ug/L)	Input Check	B Available (Y/N)?	Are all B non- detects (Y/N)?	If all data points ND Enter the limit (MDL) (ug/L)	Enter the Detected Maximum Conc (ug/L)	Input Check
1	Antimony	Y			4	Check input	N			4.6	
2	Arsenic					Check input	N				
3	Beryllium				0.2	Check input	N			0.235	
4	Cadmium	Y				Check input	Y	N		40.7	
5a	Chromium (III)					Check input	N				
5b	Chromium (VI)	Y			5	Check input	N			14.3	
6	Copper	Y			18.34	Check input	Y	N		6.46	
7	Lead	Y			3	Check input	Y	N		0.0881	
8	Mercury	Y			0.0462	Check input	Y	N		30	
9	Nickel	Y			6.486	Check input	Y	N		0.33	
10	Selenium	Y			1	Check input	Y	N		0.059	
11	Silver	Y			1.55	Check input	Y	N			
12	Thallium					Check input	N				
13	Zinc	Y			56	Check input	Y	N		35	
14	Cyanide	Y			7.317	Check input	N				
15	Asbestos					Check input	N				
16	2,3,7,8 TCDD					Check input	N				
17	Acrolein	Y			1	Check input	N				
18	Acrylonitrile	Y			1	Check input	N				
19	Benzene	Y			0.27	Check input	N				
20	Bromofom	Y			0.4754	Check input	N				
21	Carbon Tetrachloride	Y			0.42	Check input	N				
22	Chlorobenzene	Y			0.19	Check input	N				
23	Chlorodibromomethane	Y			5.1187	Check input	N				
24	Chloroethane	Y			0.34	Check input	N				
25	2-Chloroethylvinyl ether	Y			0.31	Check input	N				
26	Chloroform	Y			31.9643	Check input	N				
27	Dichlorobromomethane	Y			16.785	Check input	N				
28	1,1-Dichloroethane	Y			0.28	Check input	N				
29	1,2-Dichloroethane	Y			4.25	Check input	N				
30	1,1-Dichloroethylene	Y			0.37	Check input	N				
31	1,2-Dichloropropane	Y			0.2	Check input	N				
32	1,3-Dichloropropane	Y			0.2	Check input	N				
33	Ethylbenzene	Y			0.3	Check input	N				
34	Methyl Bromide	Y			0.42	Check input	N				
35	Methyl Chloride	Y			0.36	Check input	N				
36	Methylene Chloride	Y			0.38	Check input	N				
37	1,1,2,2-Tetrachloroethane	Y			0.3	Check input	N				
38	Tetrachloroethylene	Y			0.32	Check input	N				
39	Toluene	Y			1.2789	Check input	N				
40	1,2-Trans-Dichloroethylene	Y			0.3	Check input	N				
41	1,1,1-Trichloroethane	Y			0.35	Check input	N				
42	1,1,2-Trichloroethane	Y			0.27	Check input	N				
43	Trichloroethylene	Y			0.29	Check input	N				
44	Vinyl Chloride	Y			0.34	Check input	N				
45	2-Chlorophenol					Check input	N				
46	2,4-Dichlorophenol					Check input	N				
47	2,4-Dimethylphenol					Check input	N				
48	2-Methyl-4,6-Dinitrophenol					Check input	N				
49	2,4-Dinitrophenol					Check input	N				
50	2-Nitrophenol					Check input	N				
51	4-Nitrophenol					Check input	N				
52	3-Methyl-4-Chlorophenol	Y			0.4	Check input	N				
53	Pentachlorophenol	Y				Check input	N				
54	Phenol					Check input	N				
55	2,4,6-Trichlorophenol	Y			0.2	Check input	N				
56	Acenaphthene	Y			0.17	Check input	N				
57	Acenaphthylene	Y			0.03	Check input	Y	N		0.004	
58	Anthracene	Y			0.03	Check input	Y	N		0.0002	
59	Benztidine	Y			0.12	Check input	Y	N		0.00033	
60	Benzo(a)anthracene	Y			0.09	Check input	Y	N		0.00032	
61	Benzo(a)pyrene	Y			0.11	Check input	Y	N		0.00053	
62	Benzo(b)fluoranthene	Y			0.06	Check input	Y	N		0.00064	
63	Benzo(g,h)fluoranthene	Y			0.16	Check input	Y	N		0.000326	
64	Benzo(k)fluoranthene					Check input	N				
65	Bis(2-Chloroethoxy)Methane					Check input	N				
66	Bis(2-Chloroethyl)Ether					Check input	N				
67	Bis(2-Chloroisopropyl)Ether					Check input	N				
68	Bis(2-Ethylhexyl)Phthalate					Check input	N				
69	4-Bromophenyl Phenyl Ether					Check input	N				
70	Butylbenzyl Phthalate					Check input	N				
71	2-Chloronaphthalene					Check input	N				
72	4-Chlorophenyl Phenyl Ether	Y			0.14	Check input	Y	N		0.00043	
73	Chrysene	Y				Check input	N				
74	Dibenz(a,h)Anthracene	Y			0.04	Check input	Y	N		0.00032	

CTR No.	Constituent name	Effluent Data		EFFLUENT DATA				BACKGROUND DATA (B)			
		Available Data (Y/N)?	Are all data points non-min detectable (Y/N)?	Enter the effluent detected max conc (ug/L)	Input Check	B Available (Y/N)?	Are all B non-detects (Y/N)?	If all data points ND Enter the min detection limit (MDL) (ug/L)	Detected Maximum Background Conc	Input Check	
75	1,2-Dichlorobenzene	Y	Y	0.12		N					
76	1,3-Dichlorobenzene	Y	Y	0.16		N					
77	1,4-Dichlorobenzene	Y	Y	0.12		N					
78	3,3-Dichlorobenzidine	Y				N					
79	Diethyl Phthalate					N					
80	Dimethyl Phthalate					N					
81	Di-n-Butyl Phthalate					N					
82	2,4-Dinitrofluorene					N					
83	2,5-Dinitrofluorene					N					
84	Di-n-Octyl Phthalate					N					
85	1,2-Diphenylhydrazine					N					
86	Fluoranthene	Y	Y	0.03		Y	N	0.002			
87	Fluorene	Y	Y	0.02		Y	N	0.01			
88	Hexachlorobenzene	Y	Y	0.4		Y	N	0.000073			
89	Hexachlorobutadiene					N					
90	Hexachlorocyclopentadiene					N					
91	Hexachloroethane	Y	Y	0.04		Y	N	0.000473			
92	Indeno(1,2,3-cd)Pyrene	Y				Y					
93	Isophorone					N					
94	Naphthalene	Y	Y	0.05		Y					
95	Nitrobenzene					N					
96	N-Nitrosodimethylamine					N					
98	N-Nitrosodiphenylamine					N					
99	Phenanthrene	Y	Y	0.03		Y					
100	Pyrene	Y	Y	0.03		Y	N	0.0016			
101	1,2,4-Trichlorobenzene	Y	Y	0.03		N					
102	Aldrin	Y	Y	0.03		N					
103	alpha-BHC	Y	Y	0.001		N					
104	beta-BHC	Y	Y	0.001		N					
105	gamma-BHC	Y	Y	0.001		N					
106	delta-BHC	Y	Y	0.001		N					
107	Chlordane	Y	Y	0.005		Y		0.000344			
108	4,4-DDT	Y	Y	0.001		Y					
109	4,4-DDE (linked to DDT)	Y	Y	0.001		Y		0.001159			
110	4,4-DDT	Y	Y	0.001		Y		0.001159			
111	Dieldrin	Y	Y	0.002		Y		0.000237			
112	alpha-Endosulfan	Y	Y	0.002		Y		0.000017			
113	beta-Endosulfan	Y	Y	0.001		Y		0.000059			
114	Endosulfan Sulfate	Y	Y	0.001		Y		0.0001433			
115	Endrin	Y	Y	0.002		Y	N	0.000073			
116	Endrin Alderhyde	Y	Y	0.002		N					
117	Hepachlor	Y	Y	0.003		Y		0.000017			
118	Hepachlor Epoxide	Y	Y	0.002		Y		0.000121			
119-125	PCBs sum	Y	Y	0.03		N					
126	Toxaphene	Y	Y	0.2		Y					
	Triibutylin	Y				N					
	Total PAHs	Y				N		0.008			
	Chlorpyrifos	Y				Y					
	Diazinon	Y				Y					



## **Attachment 3 Results of Reasonable Potential Analysis**

Beginning			Step 2	Step 3		Maximum Foldback Concentration (MFC) (ppb)	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10	Step 11	Step 12	Step 13	Step 14	Step 15	Step 16	Step 17	Step 18	Step 19	Step 20	Step 21	Step 22	Step 23	Step 24	Step 25	Step 26	Step 27	Step 28	Step 29	Step 30	Step 31	Step 32	Step 33	Step 34	Step 35	Step 36	Step 37	Step 38	Step 39	Step 40	Step 41	Step 42	Step 43	Step 44	Step 45	Step 46	Step 47	Step 48	Step 49	Step 50	Step 51	Step 52	Step 53	Step 54	Step 55	Step 56	Step 57	Step 58	Step 59	Step 60	Step 61	Step 62	Step 63	Step 64	Step 65	Step 66	Step 67	Step 68	Step 69	Step 70	Step 71	Step 72	Step 73	Step 74	Step 75	Step 76	Step 77	Step 78	Step 79	Step 80	Step 81	Step 82	Step 83	Step 84	Step 85	Step 86	Step 87	Step 88	Step 89	Step 90	Step 91	Step 92	Step 93	Step 94	Step 95	Step 96	Step 97	Step 98	Step 99	Step 100	Step 101	Step 102	Step 103	Step 104	Step 105	Step 106	Step 107	Step 108	Step 109	Step 110	Step 111	Step 112	Step 113	Step 114	Step 115	Step 116	Step 117	Step 118	Step 119	Step 120	Step 121	Step 122	Step 123	Step 124	Step 125	Step 126	Step 127	Step 128	Step 129	Step 130	Step 131	Step 132	Step 133	Step 134	Step 135	Step 136	Step 137	Step 138	Step 139	Step 140	Step 141	Step 142	Step 143	Step 144	Step 145	Step 146	Step 147	Step 148	Step 149	Step 150	Step 151	Step 152	Step 153	Step 154	Step 155	Step 156	Step 157	Step 158	Step 159	Step 160	Step 161	Step 162	Step 163	Step 164	Step 165	Step 166	Step 167	Step 168	Step 169	Step 170	Step 171	Step 172	Step 173	Step 174	Step 175	Step 176	Step 177	Step 178	Step 179	Step 180	Step 181	Step 182	Step 183	Step 184	Step 185	Step 186	Step 187	Step 188	Step 189	Step 190	Step 191	Step 192	Step 193	Step 194	Step 195	Step 196	Step 197	Step 198	Step 199	Step 200	Step 201	Step 202	Step 203	Step 204	Step 205	Step 206	Step 207	Step 208	Step 209	Step 210	Step 211	Step 212	Step 213	Step 214	Step 215	Step 216	Step 217	Step 218	Step 219	Step 220	Step 221	Step 222	Step 223	Step 224	Step 225	Step 226	Step 227	Step 228	Step 229	Step 230	Step 231	Step 232	Step 233	Step 234	Step 235	Step 236	Step 237	Step 238	Step 239	Step 240	Step 241	Step 242	Step 243	Step 244	Step 245	Step 246	Step 247	Step 248	Step 249	Step 250	Step 251	Step 252	Step 253	Step 254	Step 255	Step 256	Step 257	Step 258	Step 259	Step 260	Step 261	Step 262	Step 263	Step 264	Step 265	Step 266	Step 267	Step 268	Step 269	Step 270	Step 271	Step 272	Step 273	Step 274	Step 275	Step 276	Step 277	Step 278	Step 279	Step 280	Step 281	Step 282	Step 283	Step 284	Step 285	Step 286	Step 287	Step 288	Step 289	Step 290	Step 291	Step 292	Step 293	Step 294	Step 295	Step 296	Step 297	Step 298	Step 299	Step 300	Step 301	Step 302	Step 303	Step 304	Step 305	Step 306	Step 307	Step 308	Step 309	Step 310	Step 311	Step 312	Step 313	Step 314	Step 315	Step 316	Step 317	Step 318	Step 319	Step 320	Step 321	Step 322	Step 323	Step 324	Step 325	Step 326	Step 327	Step 328	Step 329	Step 330	Step 331	Step 332	Step 333	Step 334	Step 335	Step 336	Step 337	Step 338	Step 339	Step 340	Step 341	Step 342	Step 343	Step 344	Step 345	Step 346	Step 347	Step 348	Step 349	Step 350	Step 351	Step 352	Step 353	Step 354	Step 355	Step 356	Step 357	Step 358	Step 359	Step 360	Step 361	Step 362	Step 363	Step 364	Step 365	Step 366	Step 367	Step 368	Step 369	Step 370	Step 371	Step 372	Step 373	Step 374	Step 375	Step 376	Step 377	Step 378	Step 379	Step 380	Step 381	Step 382	Step 383	Step 384	Step 385	Step 386	Step 387	Step 388	Step 389	Step 390	Step 391	Step 392	Step 393	Step 394	Step 395	Step 396	Step 397	Step 398	Step 399	Step 400	Step 401	Step 402	Step 403	Step 404	Step 405	Step 406	Step 407	Step 408	Step 409	Step 410	Step 411	Step 412	Step 413	Step 414	Step 415	Step 416	Step 417	Step 418	Step 419	Step 420	Step 421	Step 422	Step 423	Step 424	Step 425	Step 426	Step 427	Step 428	Step 429	Step 430	Step 431	Step 432	Step 433	Step 434	Step 435	Step 436	Step 437	Step 438	Step 439	Step 440	Step 441	Step 442	Step 443	Step 444	Step 445	Step 446	Step 447	Step 448	Step 449	Step 450	Step 451	Step 452	Step 453	Step 454	Step 455	Step 456	Step 457	Step 458	Step 459	Step 460	Step 461	Step 462	Step 463	Step 464	Step 465	Step 466	Step 467	Step 468	Step 469	Step 470	Step 471	Step 472	Step 473	Step 474	Step 475	Step 476	Step 477	Step 478	Step 479	Step 480	Step 481	Step 482	Step 483	Step 484	Step 485	Step 486	Step 487	Step 488	Step 489	Step 490	Step 491	Step 492	Step 493	Step 494	Step 495	Step 496	Step 497	Step 498	Step 499	Step 500	Step 501	Step 502	Step 503	Step 504	Step 505	Step 506	Step 507	Step 508	Step 509	Step 510	Step 511	Step 512	Step 513	Step 514	Step 515	Step 516	Step 517	Step 518	Step 519	Step 520	Step 521	Step 522	Step 523	Step 524	Step 525	Step 526	Step 527	Step 528	Step 529	Step 530	Step 531	Step 532	Step 533	Step 534	Step 535	Step 536	Step 537	Step 538	Step 539	Step 540	Step 541	Step 542	Step 543	Step 544	Step 545	Step 546	Step 547	Step 548	Step 549	Step 550	Step 551	Step 552	Step 553	Step 554	Step 555	Step 556	Step 557	Step 558	Step 559	Step 560	Step 561	Step 562	Step 563	Step 564	Step 565	Step 566	Step 567	Step 568	Step 569	Step 570	Step 571	Step 572	Step 573	Step 574	Step 575	Step 576	Step 577	Step 578	Step 579	Step 580	Step 581	Step 582	Step 583	Step 584	Step 585	Step 586	Step 587	Step 588	Step 589	Step 590	Step 591	Step 592	Step 593	Step 594	Step 595	Step 596	Step 597	Step 598	Step 599	Step 600	Step 601	Step 602	Step 603	Step 604	Step 605	Step 606	Step 607	Step 608	Step 609	Step 610	Step 611	Step 612	Step 613	Step 614	Step 615	Step 616	Step 617	Step 618	Step 619	Step 620	Step 621	Step 622	Step 623	Step 624	Step 625	Step 626	Step 627	Step 628	Step 629	Step 630	Step 631	Step 632	Step 633	Step 634	Step 635	Step 636	Step 637	Step 638	Step 639	Step 640	Step 641	Step 642	Step 643	Step 644	Step 645	Step 646	Step 647	Step 648	Step 649	Step 650	Step 651	Step 652	Step 653	Step 654	Step 655	Step 656	Step 657	Step 658	Step 659	Step 660	Step 661	Step 662	Step 663	Step 664	Step 665	Step 666	Step 667	Step 668	Step 669	Step 670	Step 671	Step 672	Step 673	Step 674	Step 675	Step 676	Step 677	Step 678	Step 679	Step 680	Step 681	Step 682	Step 683	Step 684	Step 685	Step 686	Step 687	Step 688	Step 689	Step 690	Step 691	Step 692	Step 693	Step 694	Step 695	Step 696	Step 697	Step 698	Step 699	Step 700	Step 701	Step 702	Step 703	Step 704	Step 705	Step 706	Step 707	Step 708	Step 709	Step 710	Step 711	Step 712	Step 713	Step 714	Step 715	Step 716	Step 717	Step 718	Step 719	Step 720	Step 721	Step 722	Step 723	Step 724	Step 725	Step 726	Step 727	Step 728	Step 729	Step 730	Step 731	Step 732	Step 733	Step 734	Step 735	Step 736	Step 737	Step 738	Step 739	Step 740	Step 741	Step 742	Step 743	Step 744	Step 745	Step 746	Step 747	Step 748	Step 749	Step 750	Step 751	Step 752	Step 753	Step 754	Step 755	Step 756	Step 757	Step 758	Step 759	Step 760	Step 761	Step 762	Step 763	Step 764	Step 765	Step 766	Step 767	Step 768	Step 769	Step 770	Step 771	Step 772	Step 773	Step 774	Step 775	Step 776	Step 777	Step 778	Step 779	Step 780	Step 781	Step 782	Step 783	Step 784	Step 785	Step 786	Step 787	Step 788	Step 789	Step 790	Step 791	Step 792	Step 793	Step 794	Step 795	Step 796	Step 797	Step 798	Step 799	Step 800	Step 801	Step 802	Step 803	Step 804	Step 805	Step 806	Step 807	Step 808	Step 809	Step 810	Step 811	Step 812	Step 813	Step 814	Step 815	Step 816	Step 817	Step 818	Step 819	Step 820	Step 821	Step 822	Step 823	Step 824	Step 825	Step 826	Step 827	Step 828	Step 829	Step 830	Step 831	Step 832	Step 833	Step 834	Step 835	Step 836	Step 837	Step 838	Step 839	Step 840	Step 841	Step 842	Step 843	Step 844	Step 845	Step 846	Step 847	Step 848	Step 849	Step 850	Step 851	Step 852	Step 853	Step 854	Step 855	Step 856	Step 857	Step 858	Step 859	Step 860	Step 861	Step 862	Step 863	Step 864	Step 865	Step 866	Step 867	Step 868	Step 869	Step 870	Step 871	Step 872	Step 873	Step 874	Step 875	Step 876	Step 877	Step 878	Step 879	Step 880	Step 881	Step 882	Step 883	Step 884	Step 885	Step 886	Step 887	Step 888	Step 889	Step 890	Step 891	Step 892	Step 893	Step 894	Step 895	Step 896	Step 897	Step 898	Step 899	Step 900	Step 901	Step 902	Step 903	Step 904	Step 905	Step 906	Step 907	Step 908	Step 909	Step 910	Step 911	Step 912	Step 913	Step 914	Step 915	Step 916	Step 917	Step 918	Step 919	Step 920	Step 921	Step 922	Step 923	Step 924	Step 925	Step 926	Step 927	Step 928	Step 929	Step 930	Step 931	Step 932	Step 933	Step 934	Step 935	Step 936	Step 937	Step 938	Step 939	Step 940	Step 941	Step 942	Step 943	Step 944	Step 945	Step 946	Step 947	Step 948	Step 949	Step 950	Step 951	Step 952	Step 953	Step 954	Step 955	Step 956	Step 957	Step 958	Step 959	Step 960	Step 961	Step 962	Step 963	Step 964	Step 965	Step 966	Step 967	Step 968	Step 969	Step 970	Step 971	Step 972	Step 973	Step 974	Step 975	Step 976	Step 977	Step 978	Step 979	Step 980	Step 981	Step 982	Step 983	Step 984	Step 985	Step 986	Step 987	Step 988	Step 989	Step 990	Step 991	Step 992	Step 993	Step 994	Step 995	Step 996	Step 997	Step 998	Step 999	Step 1000

[illegible]

**Attachment 4**  
**Calculation of Final WQBELs**

Data Initialization:		Dilution:		0													
		No. Samples Per Month:		4													
					Aquatic Criteria Available? (Min. if Y)	Human Health Criteria Available?	Applicable Acute WQO	Applicable Chronic WQO	Bckgrnd Data Available? Max if Avail.	Acute ECA	Chronic ECA	Human Health ECA	CV, by SIP Guidance	Acute ECA (Sigma^2)			
Beginning																	
	Constituent name	RP?															
6	Copper <sup>c</sup>	Y	6.575342	N	6.575342	12.2845	14.3	6.575342466	12.28449962	No HH Criteria	0.280631	0.075806					
7	Lead <sup>b</sup>	Y	4.794138	N	123.0258	4.794138	6.46	123.0257818	4.794138094	No HH Criteria	0.994229	0.687376					
8	Mercury (303d listed) <sup>b</sup>	Y	0.025	0.051	2.1	0.025	0.0881	2.1	0.025	0.051	0.507004	0.22877					
9	Nickel <sup>b</sup>	Y	26.2963	4600	113.8462	26.2963	30	113.8461538	26.2962963	4600	0.315932	0.09514					
14	Cyanide <sup>b</sup>	Y	1	220000	1	1	N	1	1	220000	0.372518	0.129948					
109	4,4'-DDE (linked to DDT)	Y		0.00059	0.00059	0.00059	0.001159	0.00059	0.00059	0.00059	0.6	0.307485					
110	4,4'-DDD	Y		0.00084	No Acute	No Chronic	0.001159	No Acute	No chronic	0.00084	0.6	0.307485					
111	Dieldrin (303d listed)	Y	0.0019	0.00014	0.24	0.0019	0.000237	0.24	0.0019	0.00014	0.6	0.307485					
118	Heptachlor Epoxide	Y	0.0036	0.00011	0.053	0.0036	0.000121	0.053	0.0036	0.00011	0.6	0.307485					

[illegible]

## **Attachment 5**

### **Mercury Mass Limit Calculations**

MERCURY MASS LIMIT COMPUTATIONS

Date [1]	Flow, Q, MGD [1]	Mercury Concentration, C, ug/l [1]	Mass = Q X C, g/day	Avg. Load, MAML, g/day [2]	log of MAML (in MAML)
May-99	5.90	0.016	0.348		
Jun-99	5.60	0.022	0.470		
Jul-99	5.45	0.021	0.443		
Sep-99	5.33	0.018	0.373		
Oct-99	5.17	0.013	0.250		
Nov-99	5.33	0.014	0.285		
Dec-99	5.55	0.015	0.314		
Jan-00	5.84	0.020	0.435		
Feb-00	7.28	0.008	0.222		
Mar-00	9.76	0.044	1.609		
Apr-00	6.08	0.027	0.616		
May-00	5.74	0.033	0.712	0.506	(0.6805)
Jun-00	5.57	0.017	0.367	0.508	(0.6774)
Jul-00	5.46	0.020	0.410	0.503	(0.6873)
Aug-00	5.28	0.024	0.488	0.507	(0.6798)
Sep-00	5.31	0.018	0.371	0.507	(0.6801)
Oct-00	5.33	0.011	0.212	0.503	(0.6865)
Nov-00	0.00	0.000	0.000	0.480	(0.7347)
Dec-00	5.21	0.101	1.987	0.619	(0.4795)
Jan-01	6.19	0.013	0.302	0.608	(0.4977)
Feb-01	8.75	0.015	0.492	0.630	(0.4613)
Mar-01	7.92	0.018	0.526	0.540	(0.6157)
Apr-01	5.57	0.017	0.365	0.519	(0.6553)
May-01	5.58	0.022	0.464	0.499	(0.6959)
Jun-01	5.42	0.020	0.406	0.502	(0.6893)
Jul-01	5.12	0.020	0.379	0.499	(0.6946)
Aug-01	5.05	0.023	0.435	0.495	(0.7036)
Sep-01	5.24	0.026	0.513	0.507	(0.6800)
Oct-01	5.05	0.016	0.299	0.514	(0.6658)
Nov-01	5.15	0.012	0.238	0.534	(0.6278)
Dec-01	8.97	0.020	0.688	0.425	(0.8546)
Jan-02	13.85	0.017	0.898	0.475	(0.7441)
Feb-02	6.19	0.017	0.398	0.467	(0.7606)
Mar-02	6.43	0.046	1.129	0.572	(0.5584)
Apr-02	5.51	0.027	0.555	0.530	(0.6349)
May-03	6.70	0.014	0.347	0.519	(0.6554)
Nov-03	4.83	0.011	0.202	0.499	(0.6955)

Statistical analysis of 12-month moving average mass loads (MAMLs)

Count, n, of 12-month MAMLs 26  
 Maximum 12-month MAMLs 0.630 grams per day (g/day)  
 Maximum 12-month MAMLs 0.019 kilograms per month (kg/mo)  
 Average 12-month MAML 0.518 g/day  
 In-normal per Minitab analysis 0.016 kg/mo  
 Standard Deviation, ln(MAML) 0.086  
 Mean, ln(MAML) -0.661  
 Mean + 3 STDEV, ln(MAML) -0.405  
 e-exponentiated [Mean+3 STDEV, ln(MAML)] 0.667 g/day  
 99.87th percentile of 12-month MAMLs 0.020 kg/mo

Mercury Mass Emission Trigger = 0.020 1

Notes:

[1] Information from the Annual Reports and Self-Monitoring Reports  
 [2] MA [Hg] load in g/d is the moving average mercury load in grams per day.  
 This calculation is the product of the moving average flow, mercury concentration, and a unit-conversion multiplier of 3.785.



## **Attachment 6 Lead Compliance Feasibility Analysis**

Sampling Point	Constituent	Date	Result Units
E-003 Wet Weather Eff Daily Maximum ug/l	Lead	1/5/2000	3.0000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Lead	2/8/2000	3.0000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Lead	3/7/2000	3.0000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Lead	4/7/2000	3.0000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Lead	5/3/2000	3.0000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Lead	1/3/2001	3.0000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Lead	3/6/2001	2.0000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Lead	4/7/2001	0.0000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Lead	11/5/2001	0.3300 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Lead	1/3/2002	0.6500 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Lead	2/9/2002	0.3500 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Lead	3/7/2002	0.4800 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Lead	4/2/2002	0.5100 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Lead	1/1/2003	0.3500 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Lead	5/1/2003	0.2900 ug/l
			Median 0.65
			95th P'ctile 3.00
			99.87th P'ctile 3.00

**Attachment 7**  
**Nickel Compliance Feasibility Analysis**

Sampling Point	Constituent	Date	Result Units
E-003 Wet Weather Eff Daily Maximum ug/l	Nickel	5/4/1999	5.0000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Nickel	1/5/2000	5.0000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Nickel	2/8/2000	6.0000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Nickel	3/7/2000	5.0000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Nickel	4/7/2000	4.0000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Nickel	5/3/2000	4.0000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Nickel	1/3/2001	5.0000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Nickel	3/6/2001	5.0000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Nickel	4/7/2001	5.0000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Nickel	11/5/2001	2.4000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Nickel	1/3/2002	5.8000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Nickel	2/9/2002	3.5000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Nickel	3/7/2002	4.0000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Nickel	4/2/2002	4.2000 ug/l
E-003 Wet Weather Eff Daily Maximum ug/l	Nickel	1/1/2003	4.8000 ug/l
			Median 5.00
			95th P'ctile 5.87
			99.87th P'ctile 6.00

Novato Sanitary District  
NPDES Permit No. CA0037958  
Order No: R2-2004-0093

Attachment E.  
*July 22, 2004 Novato Sanitary District Infeasibility Study*

Novato Sanitary District  
2004 NPDES Permit Renewal

## Infeasibility Analyses

July 22, 2004

### Introduction

These infeasibility analyses and resulting requests for compliance schedules and interim limits are submitted to the Regional Water Quality Control Board (RWQCB) by the Novato Sanitary District (District) to demonstrate the District's inability to comply with the proposed water-quality based effluent limits for copper, mercury, nickel, cyanide, and the organochlorine pesticides DDE, dieldrin, and heptachlor epoxide.

### Background

The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California (known as the State Implementation Policy (SIP), March, 2000) establishes statewide policy for NPDES permitting. The SIP provides for the situation where an existing NPDES discharger cannot immediately comply with an effluent limitation derived from a California Toxics Rule (CTR) or Basin Plan objective. The SIP allows for the adoption of interim effluent limits and a schedule to come into compliance with the final limit in such cases. To qualify for interim limits and a compliance schedule, the SIP requires that an existing discharger demonstrate that it is infeasible to achieve immediate compliance with the CTR- or Basin Plan-based limit.

The term "infeasible" is defined in the SIP as "not capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors."

The SIP requires that the following information be submitted to the Regional Board to support a finding of infeasibility:

- (a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and sources of the pollutant in the waste stream, including the results of those efforts;
- (b) documentation of source control and/or pollution minimization efforts currently under way or completed;
- (c) a proposed schedule for additional or future source control measures, pollutant minimization or waste treatment; and
- (d) a demonstration that the proposed schedule is as short as practicable.

The following analysis pertains to the proposed water-quality-based effluent limits proposed in the RPA dated June 2004.

## Pollutants to be Evaluated

The pollutants for which interim limits are needed for the District are as follows:

- copper
- mercury
- nickel
- cyanide
- 4,4'-DDE
- Dieldrin
- Heptachlor epoxide

## Effluent Limit Attainability

The proposed final effluent limits contained in the fact sheet of the draft tentative order for the constituents are compared to the maximum observed effluent concentrations for these constituents in Table 1.

**Table 1. Proposed Effluent Limits for Novato Sanitary District**

Pollutant	Water Quality Based Effluent Limits		District Effluent Quality
	AMEL <sup>1</sup>	MDEL <sup>2</sup>	MEC <sup>3</sup>
Copper <sup>4</sup>	4.54	6.62	16.3
Mercury	0.0211	0.0392	0.0462
Nickel	6.38	9.75	6.49
Cyanide	0.615	1.00	7.32
4,4'-DDE	0.00029	0.00059	<0.001
Dieldrin	0.00014	0.00028	<0.002
Heptachlor epoxide	0.00011	0.00022	<0.002

Notes:

All values in µg/L.

<sup>1</sup>AMEL: average monthly effluent limit

<sup>2</sup>MDEL: maximum daily effluent limit

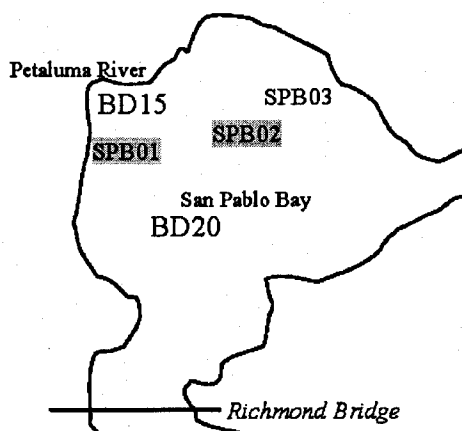
<sup>3</sup>MEC: maximum effluent concentration

<sup>4</sup>Translators were used to adjust CTR criteria.

The final effluent limits shown above are calculated using procedures described in Section 1.4 of the SIP. A dissolved to total metals translator, calculated using data collected at stations SJR01 and SJR02 by Larry Walker Associates during the San Pablo Bay Copper and Nickel Study in 2000, and data collected from the San Pablo Bay and the Pinole Point stations during the RMP program between 1993 and 2001, was used to adjust the CTR criteria for copper. Figure 1 shows the locations of the Copper and Nickel Study stations, and Figure 2 shows the two RMP stations. Background values were based on monitoring conducted at the San Pablo Bay station during the RMP program between 1993 and 2001. Dilution was taken as zero and the receiving water was classified as estuarine (i.e., lowest of freshwater and saltwater criteria is used for effluent limit calculation). Hardness, where applicable, was assumed to be 138 mg/L, the minimum value

measured at the San Pablo Bay RMP station. Other variables in the effluent limit calculation included coefficients of variation for the different pollutants.

Maximum observed effluent concentrations are based on recent plant effluent quality data (May 1999 – April 2004) collected during the discharge months (September 1 through May 31). As shown in the table above, the District will not be able to immediately comply with proposed effluent limits for copper, mercury, nickel, cyanide, 4,4'-DDE, dieldrin, or heptachlor epoxide. The infeasibility analyses for these constituents are discussed below.



**Figure 1. Map of San Pablo Bay Copper and Nickel Study Stations (partial)**



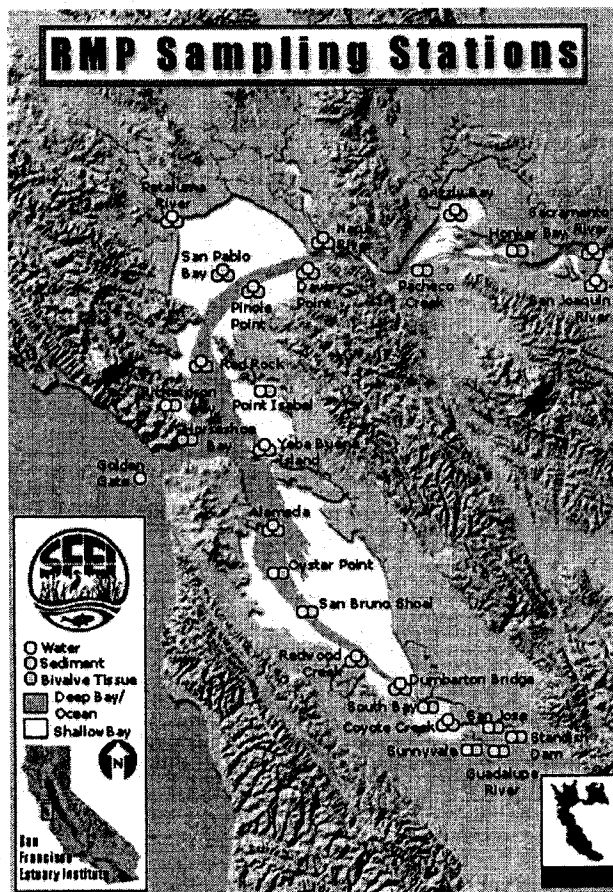


Figure 2. Regional Monitoring Program Monitoring Stations Map

### Source Control and Pollution Prevention Efforts

The District's pretreatment program regulates two categorical industries: Biomarin Pharmaceutical Inc. (pharmaceutical manufacturing) and Optical Metals Service (metal finishing). The pretreatment program also regulates one non-categorical significant industrial user and four non-categorical discharges that are not significant industrial users, including several dye works. The District also has an active pollution prevention program that has been in place since 1994. The District has currently identified copper, mercury, and cyanide as pollutants of concern and has developed a variety of programs over the years targeting sources of these pollutants. Some of these activities are highlighted in Table 2.

**Table 2. Novato Sanitary District Pollution Prevention Program Activities**

<b>Pollutant of Concern</b>	<b>Source Control Activities</b>
Copper*	<ul style="list-style-type: none"> <li>▪ Zero discharge requirement for industrial metal finisher Optical Metals Service</li> <li>• Vehicle services outreach encouraging zero discharge</li> <li>▪ Automotive shop inspections</li> </ul>
Copper**	<ul style="list-style-type: none"> <li>• Evaluated corrosion as a source of copper and zinc</li> <li>• Water supply corrosion control (55% copper reduction achieved)</li> </ul>
Mercury	<ul style="list-style-type: none"> <li>• BMPs, surveys, and inspections of dental offices</li> <li>• Inspections of medical clinics and laboratories</li> <li>• Fluorescent lamp collection and recycling</li> <li>• Thermometer collection and recycling</li> <li>• Battery collection and recycling</li> <li>• Semi-annual newsletter concerning proper disposal of mercury-containing products</li> <li>• Recognition of mercury-free hospital</li> </ul>
4,4'-DDE, dieldrin, heptachlor epoxide	<ul style="list-style-type: none"> <li>• Household hazardous waste collection program</li> <li>• Small business collection service</li> </ul>

\* These activities also address nickel.

\*\* These activities also address zinc, although it is not a constituent of concern.

The District is also an active participant and supporter of several regional groups and programs, including:

- Bay Area Pollution Prevention Group (BAPPG)
- Bay Area Clean Water Agencies (BACWA)
- North Bay Watershed Association
- Marin County Stormwater Pollution Prevention Program: "Handle With Care" Calendar 2003
- Hazardous Waste collection for the Small Business program
- Marin County Green Business program

The District also conducts general outreach pollution prevention activities, including:

- Participation in public events including Pollution Prevention Week and the Novato Chamber of Commerce Trade Fair
- Elementary classroom presentations: H2O - Yeah Education Program
- Semi-annual newsletter "Novato Recycling News"
- Television feature: "Grease in our Sewers"
- Pollution Prevention Web Page ([www.novatosan.com](http://www.novatosan.com))
- Inspections of dry cleaning businesses.

Additional information on pollution prevention activities targeting each constituent requiring interim effluent limits is discussed below.

## **Copper**

The maximum observed effluent concentration for copper is 16.3 µg/L (measured in April 2002) which would exceed the proposed final MDEL of 6.62 and the proposed final AMEL of 4.54 µg/L. In addition, all samples taken between October 1999 and February 2004 have copper concentrations that would exceed the proposed final MDEL. Therefore, the District will not be able to immediately comply with the proposed final limits.

The District has identified copper as a pollutant of concern and has conducted significant pollution prevention targeting copper sources. A source analysis was performed in 1995, which showed that 88% of the influent copper to the Novato Treatment Plant was due to corrosion. The District's water purveyor, the Sonoma County Water Agency, began a corrosion control project in 1995, which has resulted in a 55% decrease in copper load to the treatment plant. The District's other activities include requiring Novato's only industrial metal finisher to be a zero discharge industry, inspections of automotive repair shops, and outreach to vehicle service shops encouraging zero discharge. The outreach resulted in several shops sealing their floor drains and sumps. The District has issued permits to several dye works that may be sources of copper. The District helped coordinate "clean shop" tours at two automotive repair shops during Pollution Prevention Week in 2003, promoting the Marin Green Business program.

The District has conducted effective source control for many sources of copper in its service area, achieving significant reductions in the copper load. The District will continue to investigate control strategies for reducing the remaining copper sources and achieving further copper loading reductions, however, additional significant reduction in copper load is not likely. The District will continue to work with the permitted industries to identify opportunities for further discharge reductions at their facilities. If necessary, the District is also willing to work with plumbers to encourage copper pipe installation BMPs to reduce corrosion, although this is expected to have little or no effect on influent levels, as most of the District's plumbing is already installed.

## **Mercury**

The maximum observed effluent concentration for mercury is 0.0462 µg/L (measured in March 2002) which exceeds the proposed final MDEL of 0.0392 µg/L and the proposed final AMEL of 0.0211 µg/L. The effluent concentration has exceeded these limits twice in wet weather samples since October 1999. Therefore, the District will not be able to consistently comply with the proposed effluent limits.

Mercury is a 303(d)-listed parameter and is the subject of a TMDL that is currently under development. Final effluent limits for this pollutant will be derived from the wasteload allocation established under the TMDL. The final effluent limit listed above for this pollutant is projected to change based on the results of the TMDL and wasteload allocation. Available information indicates that mercury is a legacy pollutant in San Francisco Bay resulting from past activities and that ongoing loadings from POTWs are not a significant source of this pollutant. As a result, costly measures for either advanced treatment or zero discharge to control mercury loading from POTWs are not expected to be required.

However, the District has a identified mercury as a pollutant of concern and has conducted source identification and pollution prevention activities for mercury sources. The source analysis performed in 1995 showed that residential sources far exceed commercial sources, providing 47% and 0.7% of the influent load, respectively. The District began a fluorescent lamp recycling program in 1999, establishing an ongoing location at which residents can turn in their old fluorescent tubes. The District conducted a thermometer exchange in April 2001 which removed over 500 thermometers, distributed "Mercury in the Environment" pamphlets at the event, and continues to collect mercury thermometers through the Household Hazardous Waste program. In June 2004, the District expanded their battery collection program from one drop-off location to four. The District's only hospital is already mercury-free, and was publicly recognized by the District for this achievement. Inspection of other medical facilities revealed that they are not using mercury thermometers. The District began working with dentists in 2001 by participating in the BAPPG Dental Amalgam committee meetings, and in 2002 by presenting a talk entitled "Environmental Responsible Dentistry" to the Marin Dental Association.

The District intends to conduct site visits of dentist offices and distribute information on recommended BMPs for managing amalgam waste. The District plans to continue its ongoing programs for fluorescent lamp, thermometer, and battery recycling, and to initiate a program for recycling switches and thermostats.

## **Nickel**

The maximum observed effluent concentration for nickel is 6.49 µg/L (measured in December 2001) which would exceed the proposed final AMEL of 6.38. Of the 77 samples collected between October 1999 and March 2004, two exceed the proposed AMEL of 6.38 µg/L, but are less than the proposed MDEL of 9.75 µg/L. Therefore, the District will not be able to consistently comply with the proposed AMEL.

The source analysis performed in 1995 showed that residential nickel sources far exceed commercial sources, providing 51% and 3.2% of the influent load, respectively. An additional 17% was contributed by tap water. The District has not currently targeting nickel as a pollutant of concern, but has conducted pollution prevention targeting metal sources in general, including requiring Novato's only industrial metal finisher to be a zero discharge industry, inspections of automotive repair shops, and outreach to vehicle service shops encouraging zero discharge. The District will continue to work with its permitted industries to reduce nickel discharges at their facilities.

New Basin Plan criteria for nickel will be adopted in October 2004. The use of translators applied to the new criteria will result in a minimum WQO of 30.4 ug/L, which is higher than the maximum effluent and ambient values (6.5 and 30.0 ug/L, respectively). Nickel will show no reasonable potential once the new criteria are adopted.

## **Cyanide**

The maximum observed effluent concentration for cyanide is 7.32 µg/L (measured in November 2001) which would exceed the proposed final MDEL of 1 µg/L and the proposed final AMEL of

0.615 µg/L. In addition, these proposed limits are less than the detection limit of 3 µg/L. Therefore, the District not be able to consistently comply with the proposed final limits.

Cyanide has been detected in the influent in only two of the 24 samples collected at the Novato and Ignacio treatment plants between January 2002 and December 2003. Typically, cyanide is not present in wastewater influent but is generated in the treatment plant disinfection process. Cyanide was detected much more frequently in the chlorinated effluent than in either the pre-chlorination effluent or the influent. Based on a review of the literature (including a study being conducted by Water Environment Research Foundation (WERF)), effluent cyanide levels above the detection limit may be due to chlorination.

The District has identified cyanide as a pollutant of concern. High effluent cyanide levels, when they have occurred, may be due to analytical interferences. As noted above, it is unlikely that source investigations would be fruitful based on the absence of detected cyanide in influent data. A special study is being conducted under a region-wide effort to develop a site-specific objective for cyanide which is expected to more closely represent actual water quality conditions than current water quality objectives. The District is participating in this study through its BACWA affiliation.

#### **4,4-DDE, Dieldrin and Heptachlor Epoxide**

The chlorinated pesticides, 4,4'-DDE, dieldrin, and heptachlor epoxide, have not been detected in the District's effluent. The method detection limits (0.001 µg/L for 4,4'-DDE and 0.002 µg/L for dieldrin and heptachlor epoxide) exceed the proposed final limits for these constituents. Therefore, there is insufficient information to determine if the District is able to comply with the proposed effluent limits.

4,4'-DDE is a decomposition product of DDT, which was banned in the U.S. for most uses in 1972 and all remaining uses in 1988. Dieldrin was banned for most uses in 1974 and all remaining uses in 1987. Dieldrin is also a decomposition product of aldrin, which use was also discontinued in the late 1980's. Heptachlor epoxide is a degradation product of heptachlor, which was banned in 1988. The District has not previously identified 4,4'-DDE, dieldrin, or heptachlor epoxide as pollutants of concern and, therefore, has not conducted pollution prevention activities that directly target these constituents. These constituents have not been detected in the District's influent since February 1998. As noted above, there is insufficient information to completely assess the District's ability to comply with the proposed effluent limits for 4,4'-DDE, dieldrin, and heptachlor epoxide. Since reasonable potential for these constituents is triggered only by background ambient conditions, the District will continue existing efforts for pesticides in general. The District will also develop outreach messages encouraging residents to turn in old pesticides to its household hazardous waste facility.

## Summary

This evaluation indicates that immediate compliance with projected final effluent limits for copper, mercury, nickel, and cyanide is not feasible for the District. In accordance with the requirements of the SIP, the District requests that the Regional Board refrain from the adoption of final effluent limits for these constituents. In lieu of final limits, the NPDES permit should include interim performance based limits with which the District can comply. The District will implement the source control actions listed in Table 3 on the following page for the constituents receiving interim limits.

Analytical methodologies do not exist that would allow evaluation of compliance with the proposed 4,4-DDE, dieldrin, or heptachlor epoxide final limits. The District believes that interim limits should be included in the permit until such time as these constituents are definitively detected in the effluent at concentrations above the WQOs.

**Table 3. Proposed Source Control Actions**

Constituent	Proposed Action	Estimated Time to Complete
Copper	<ul style="list-style-type: none"> <li>Continue existing activities</li> <li>Consider working with plumbers</li> <li>Work with permitted industry to identify other potential reduction opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing</li> <li>December 2004</li> <li>December 2006</li> </ul>
Mercury	<ul style="list-style-type: none"> <li>Continue existing activities targeting dentists</li> <li>Continue existing collection of fluorescent lamps, thermometers, and batteries</li> <li>Initiate programs for recycling thermostats and switches</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing</li> <li>Ongoing</li> <li>December 2004</li> </ul>
Nickel	<ul style="list-style-type: none"> <li>Continue existing activities targeting metals</li> <li>Adopt new Basin Plan criteria and adjust the criteria using translators</li> <li>Work with permitted industry to identify other potential reduction opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing</li> <li>October 2004</li> <li>December 2006</li> </ul>
Cyanide	<ul style="list-style-type: none"> <li>Continue monitoring influent and effluent to further characterize cyanide</li> <li>Anticipate Site-Specific Objective for San Francisco Bay</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing</li> <li>Ongoing</li> </ul>
4,4'-DDE, dieldrin, heptachlor epoxide	<ul style="list-style-type: none"> <li>Continue to monitor</li> <li>Pursue analytical methods which result in lower detection limits</li> <li>Develop outreach to encourage disposal of old pesticides at HHW facilities</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing</li> <li>Ongoing</li> <li>Eighteen months after permit adoption</li> </ul>

Novato Sanitary District  
NPDES Permit No. CA0037958  
Order No: R2-2004-0093

Attachment F.

*July 22, 2004 Novato Sanitary District Copper and Nickel Translator Calculation*

## **Novato Sanitary District Copper and Nickel Translator Calculation**

### **Purpose**

This report documents the calculation of translators for copper and nickel in the receiving water around the Novato Sanitary District's (District's) discharge point. Translator development was based on EPA guidance<sup>1</sup> and the State Implementation Plan (SIP).

Several metals criteria promulgated in the California Toxics Rule are based on dissolved fractions. A translator or conversion is required to adjust the dissolved fraction to the total fraction. Default EPA conversion factors are applied unless site-specific translators are calculated as allowed by the SIP. Site-specific translators were calculated for copper and nickel in the District's receiving water, as recommended by the Regional Water Quality Control Board.

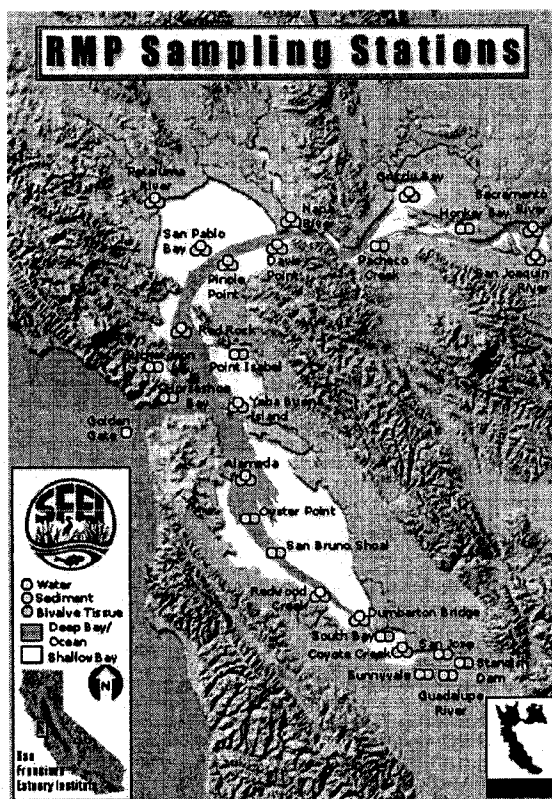
### **Data Collection**

The District discharges into the mud flats of San Pablo Bay. The receiving water data used in this analysis came from the Regional Monitoring Program (RMP) San Pablo Bay and Pinole Point stations (see Figure 1) and the data collected by Larry Walker Associates during the San Pablo Bay Copper and Nickel Study at Stations SJR-1 and SJR-2. These two stations are both in San Pablo Bay, nearer the District's discharge than any other station. Data were available for dissolved and total copper, dissolved and total nickel, and total suspended solids (TSS), between March 1993 and July 2000 (only those dates for which there were dissolved, total, and TSS data were included.)

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<sup>1</sup> United States Environmental Protection Agency (USEPA). Office of Water. "The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion. EPA 823-B-96-007. June 1996.

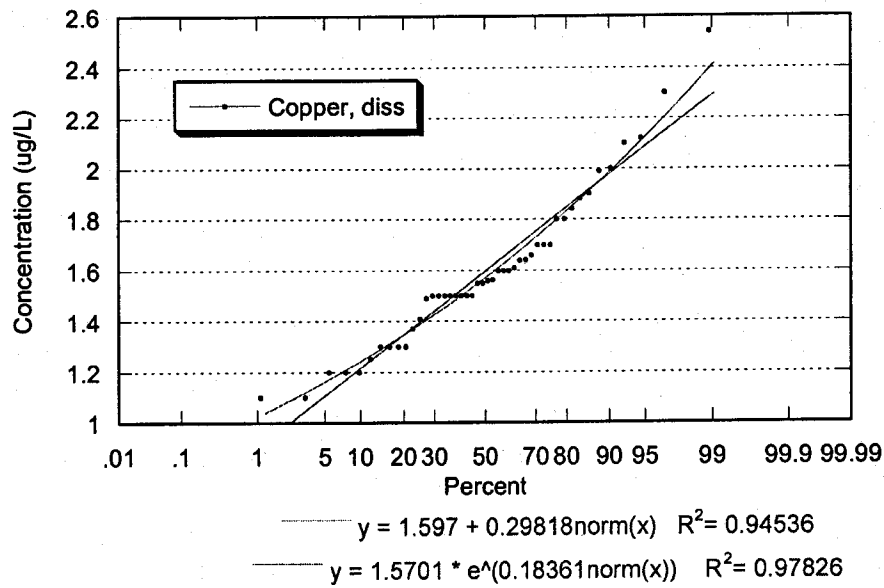




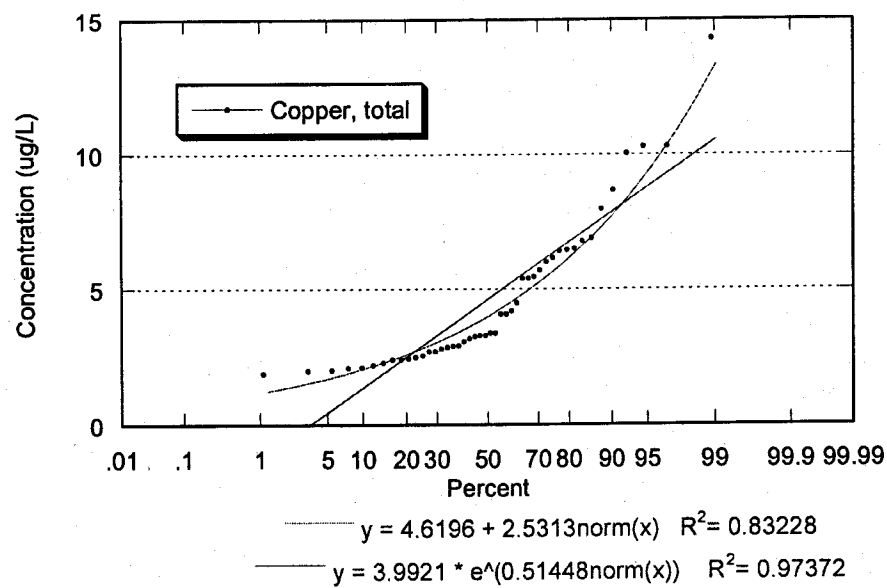
**Figure 1. Regional Monitoring Program Monitoring Stations Map**

## Checking for Distributional Normality

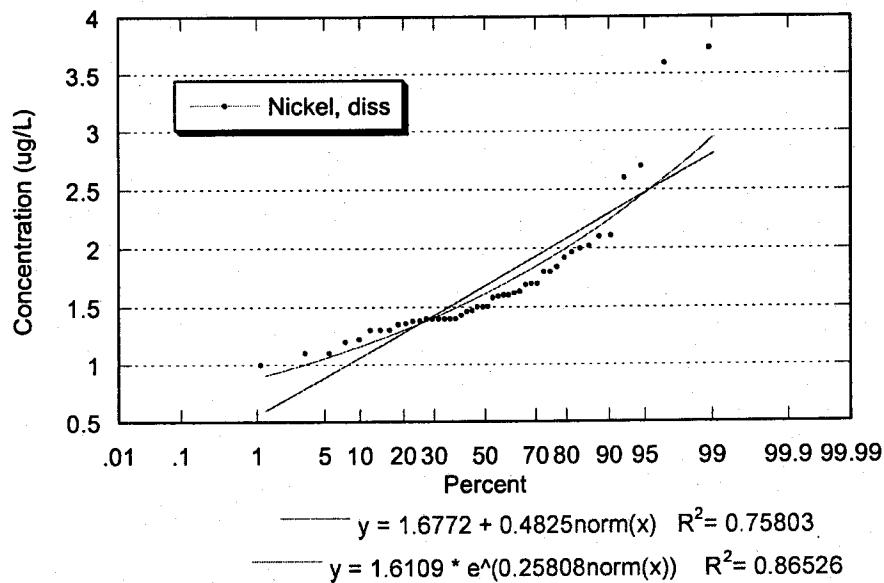
The data were plotted on probability plots, as shown in Figures 2 through 6, to determine the most appropriate distributional assumption (normal versus log-normal). Regression lines were fit for both linear and log transformation of the constituent concentration data. The log-normal fit is better, based on visual inspection and the coefficient of determination ( $R^2$  values).



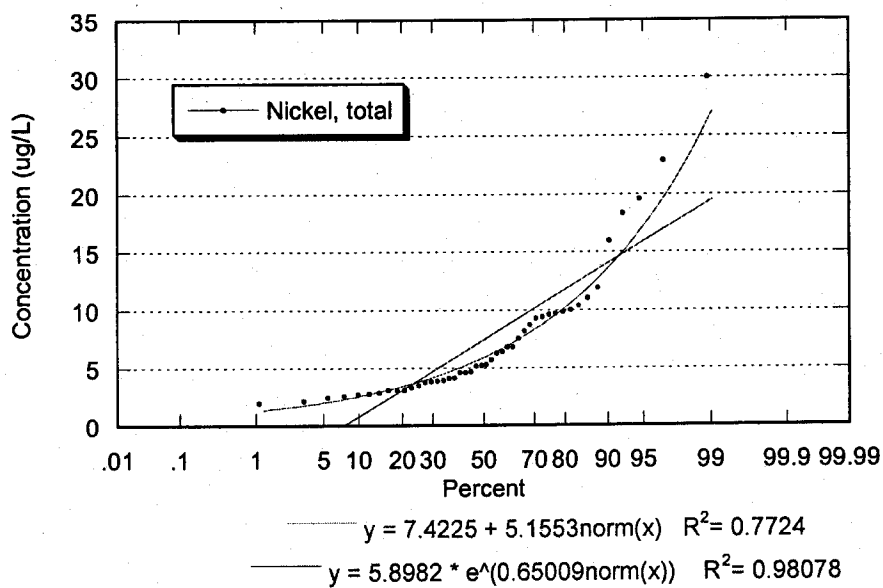
**Figure 2. Dissolved Copper Probability Plot**



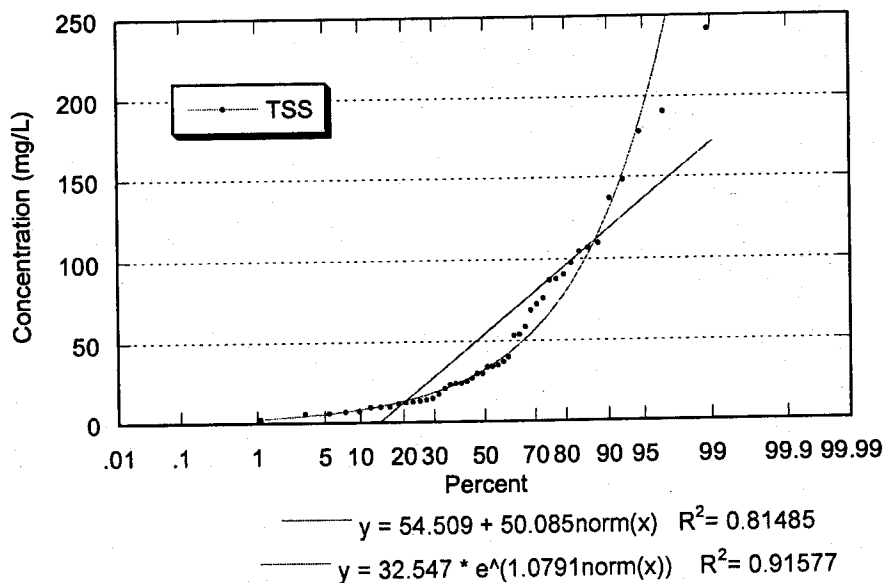
**Figure 3. Total Copper Probability Plot**



**Figure 4. Dissolved Nickel Probability Plot**



**Figure 5. Total Nickel Probability Plot**



**Figure 6. Total Suspended Solids Probability Plot**

### Basic Translator Calculation

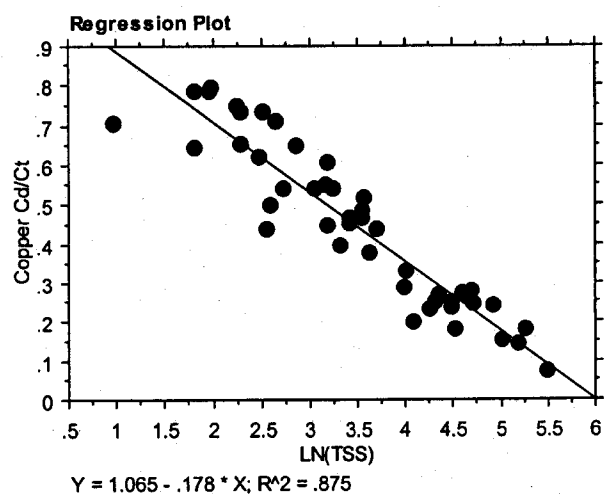
The basic translator is used when no significant correlation can be found between the dissolved fraction and the TSS concentration. Basic translators were calculated for copper and nickel by calculating the dissolved fraction. The dissolved fraction was determined by dividing each dissolved concentration by the corresponding total concentration. The basic chronic translator was then calculated by taking the geometric mean of the dissolved fractions. The basic acute translator was calculated by taking the 90<sup>th</sup> percentile of the dissolved fractions. The basic translators are shown in Table 1.

### Determining Correlation with TSS

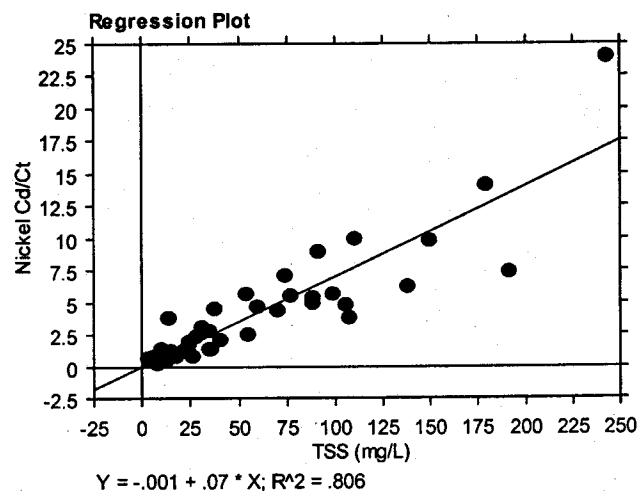
The dissolved fraction was regressed against TSS to determine whether a statistical relationship was evident. These regressions are shown with corresponding  $R^2$  values in Figures 7 and 8. The p-values from the regression analysis were less than 0.001, indicating a good correlation. The residuals from the regressions of the dissolved fraction of copper and TSS, and nickel and TSS were plotted with the fitted metals value. An even, horizontal distribution was assumed to indicate a good correlation with TSS, but a curved or funnel-shaped distribution was assumed to indicate a poor correlation. The residual versus fitted metals plots are shown as Figures 9 and 10.

The residual versus fitted copper fraction indicate a good correlation with TSS, with normally distributed residuals. The residual versus fitted nickel fraction showed a poor correlation with TSS, with a definite upward curve. Therefore, the nickel translator analysis concluded with the basic translator calculation, but the copper analysis continued

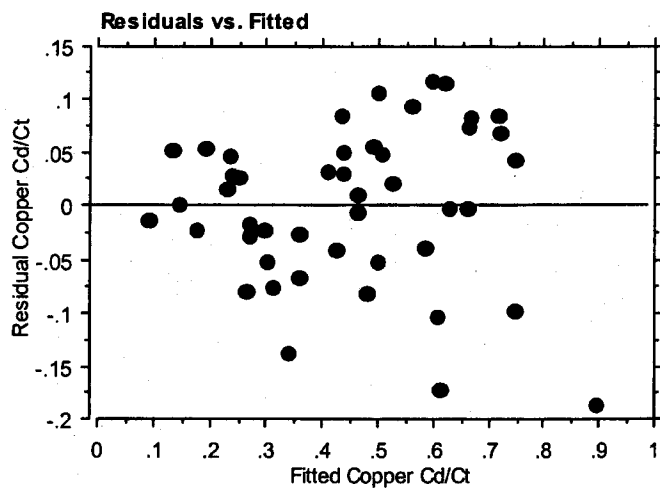
to the linear regression translator calculation. Many other methods are available for determining correlation with TSS, however, these were not likely to result in significantly different translators.



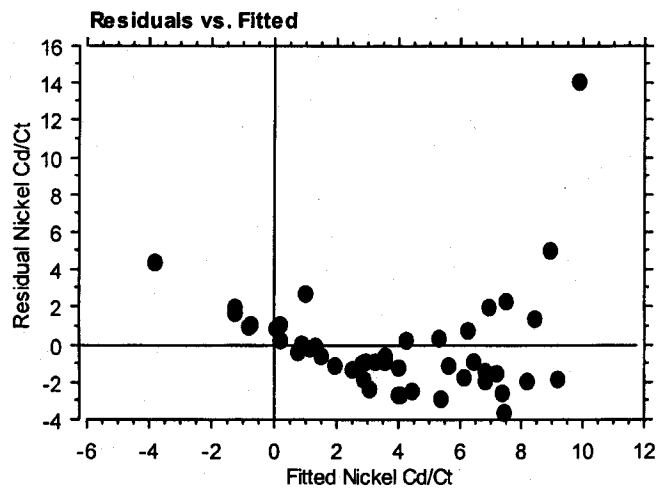
**Figure 7. Dissolved Copper Fraction Regressed against LN(TSS)**



**Figure 8. Dissolved Nickel Fraction Regressed against TSS**



**Figure 9. Residual versus Fitted Copper Dissolved Fractions**



**Figure 10. Residual versus Fitted Nickel Dissolved Fractions**

## Linear Regression Translator Calculation

The simple linear regression equations, relating TSS and the dissolved fraction, are representative translators calculated from the 10<sup>th</sup> percentile and geometric mean TSS concentrations (acute and chronic, respectively). A lower TSS concentration results in higher translator values for the acute water quality objectives, as the TSS concentration and translator are inversely related. The copper acute and chronic translators were calculated using this method.

The first linear regression equation was based on the following equality:

$$Ct/Cd - 1 = b + M * TSS$$

Where:

Ct = total concentration

Cd = dissolved concentration

b = y-intercept

M = slope

The slope and y-intercept were calculated from the other, known quantities, in array format. The second linear regression equation calculated the acute and chronic copper translators, as follows:

$$\text{Acute translator} = 1 / \{b + M * \text{GeoMean}(TSS) + 1\}$$

$$\text{Chronic translator} = 1 / \{b + M * 10^{\text{th}}\text{Percentile}(TSS) + 1\}$$

The calculated linear regression translators for copper are shown in Table 1. The recommended translators are indicated by bolding. The RMP data used in the study are shown in Table 2.

Further and more accurate correlation may exist between the dissolved fraction and TSS, however, additional study is required before the best correlation can be determined. It is unlikely that translators developed from the best correlation would result in significantly different translators from those already determined.

**Table 1. Calculated for Copper and Nickel Translators**

	Copper	Nickel
<b>Basic Translators</b>		
Acute	0.73	0.65
Chronic	0.39	0.27
<b>Linear Regression Translators</b>		
Acute	0.72	---
Chronic	0.45	---

**Table 2. San Pablo Bay and Pinole Point RMP Data**

Date	TSS (mg/L)	Dissolved Copper (ug/L)	Total Copper (ug/L)	Dissolved Nickel (ug/L)	Total Nickel (ug/L)
<b>Pinole Point Station</b>					
3/4/1993	7.00	2.30	2.92	3.60	4.18
5/26/1993	87.5	1.64	6.47	1.62	9.60
9/15/1993	13.2	1.55	3.08	1.46	2.80
2/7/1994	27.1	1.30	3.27	1.36	4.68
4/26/1994	76.4	1.84	6.78	1.58	10.36
8/22/1994	53.9	1.99	6.01	1.97	6.83
2/13/1995	6.00	1.66	2.56	2.11	3.77
4/20/1995	73.1	1.37	5.46	1.22	9.81
8/21/1995	12.3	1.49	2.03	1.38	2.73
2/12/1996	25.4	1.80	3.30	2.60	4.60
4/22/1996	40.1	1.50	3.40	1.50	4.60
7/23/1996	23.9	1.70	2.80	1.70	3.50
1/27/1997	178	1.50	10.30	1.30	19.60
4/21/1997	6.00	1.50	1.90	1.70	2.50
8/4/1997	30.0	1.50	3.30	1.40	5.70
2/2/1998	24.0	1.30	2.90	1.30	3.90
4/14/1998	98.0	1.50	5.40	1.40	9.30
7/27/1998	14.0	1.50	2.10	1.40	3.10
2/8/1999	12.8	1.10	2.50	1.10	5.30
4/19/1999	53.4	1.20	4.10	1.30	8.70
7/19/1999	2.60	1.70	2.40	1.80	2.90
2/7/2000	11.8	1.25	2.01	1.37	1.98
7/17/2000	35.0	1.41	2.71	1.59	3.83
<b>San Pablo Bay Station</b>					
3/4/1993	7.20	2.54	3.18	3.73	5.17
5/26/1993	191	1.90	10.29	1.92	15.98
9/15/1993	58.9	1.30	6.42	1.35	7.55
2/7/1994	23.3	1.50	2.71	1.47	4.12
4/26/1994	137	2.12	8.68	1.63	11.90
8/22/1994	69.3	1.88	7.98	1.84	9.98
2/13/1995	15.0	1.56	2.86	2.02	3.96
4/19/1995	148	1.55	10.04	1.69	18.36
8/21/1995	9.80	1.61	2.45	1.43	3.31
2/12/1996	34.2	2.00	4.10	2.70	6.30
4/22/1996	17.4	1.50	2.30	1.40	2.60
7/24/1996	9.40	1.80	2.40	1.60	3.10
1/27/1997	110	1.70	6.90	2.10	22.90
4/21/1997	21.0	1.20	2.20	1.40	3.10
8/4/1997	107	1.60	5.70	2.00	9.70
2/2/1998	88.0	1.30	5.40	1.00	6.40
4/14/1998	91.0	1.20	6.50	1.10	11.00
7/27/1998	30.0	1.60	3.40	1.40	5.20



Date	TSS (mg/L)	Dissolved Copper (ug/L)	Total Copper (ug/L)	Dissolved Nickel (ug/L)	Total Nickel (ug/L)
2/8/1999	37.3	1.60	4.20	1.50	8.20
4/19/1999	242	1.10	14.30	1.20	30.00
7/19/1999	34.5	2.10	4.50	1.80	6.80
2/7/2000	9.70	1.56	2.13	1.51	2.17
7/17/2000	105	1.64	6.16	1.60	9.36

**San Pablo Bay Copper Nickel Study Station 01**

9/5/2000	18	2.52	4.28	2.56	5.03
2/13/2001	120	2.42	7.53	3.22	10.8
4/24/2001	18	1.79	2.71	1.95	3.34
6/13/2001	13	2.54	2.70	2.49	2.40

**San Pablo Bay Copper Nickel Study Station 02**

9/5/2000	36	2.82	5.35	3.08	7.23
2/13/2001	68	2.01	6.08	3.17	9.39
4/24/2001	32	1.88	3.12	2.19	4.19
6/13/2001	12	3.41	4.20	2.76	3.74

Novato Sanitary District  
NPDES Permit No. CA0037958  
Order No: R2-2004-0093

Attachment G.

April 28, 2004 *Workplan for Ignacio Treatment Plant, NPDES Permit No. CA0037955*



## NOVATO SANITARY DISTRICT

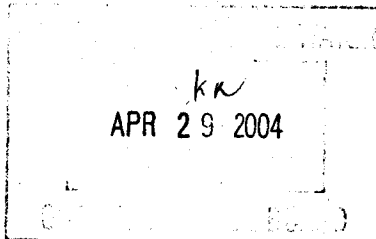
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www.novatosan.com

### BOARD OF DIRECTORS

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Legal Counsel



April 28, 2004

Mr. Ken Katen, P.E.  
San Francisco Regional Water  
Quality Control Board  
1515 Clay Street, Suite 1400  
Oakland, CA 94612

**Subject: Workplan for Ignacio Treatment Plant, NPDES Permit No. CA0037958**

Dear Mr. Katen:

The Novato Sanitary District is hereby submitting a Workplan detailing the tasks and time schedule required for the Ignacio Treatment Plant to attain compliance with the technology-based limits for BOD and TSS.

The District has completed a Strategic Plan for the wastewater collection, treatment, reuse, and discharge functions. It is currently working on the Wastewater Facilities Plan as detailed in the attached schedule. The remaining planning tasks included selecting the recommended alternative, preparing the Environmental Impact Report, and completing the public outreach. The District anticipates constructing the improvements in phases in order to keep the plants in operation during construction. The phases will be timed so as to bring the Ignacio flows into compliance prior to the March 31, 2008 deadline.

If you have any questions or need further information regarding this Workplan prepared by the District, please contact Beverly James at (415) 892-1694 ext. 111, bevj@novatosan.com.

Sincerely,

A handwritten signature in cursive script that reads "Beverly B. James".

Beverly B. James  
Manager-Engineer

Attachment

Cc: Tom Grovhaug, Larry Walker & Assoc.

# Novato Sanitary District Workplan for Treatment Plan Improvements

ID	Task Name	Duration	Start	Finish	2004	2005	2006	2007	2008
1	Public Outreach	135 days	Mon 4/12/04	Fri 10/15/04	Jan Mar May Jul Sep Nov Jan Mar May Jul Sep Nov Jan Mar May Jul Sep Nov Jan Mar May Jul Sep Nov Jan Mar May				
2	Phase 1 Goals Objectives	45 days	Mon 4/12/04	Fri 6/11/04	0%				
3	Phase 2 Alternatives	45 days	Mon 6/14/04	Fri 8/13/04	0%				
4	Phase 3 Select Recon Alt	45 days	Mon 8/16/04	Fri 10/15/04	0%				
5	Facility Plan	70 days	Mon 8/23/04	Fri 11/26/04	0%				
6	Select Recommended Alternative	40 days	Mon 8/23/04	Fri 10/15/04	0%				
7	Complete Facility Plan	30 days	Mon 10/18/04	Fri 11/26/04	0%				
8	Financial Strategy	335 days	Tue 4/27/04	Mon 8/8/05	0%				
9	Stage 1 Board decision re rates	30 days	Tue 4/27/04	Mon 6/7/04	0%				
10	Stage 1 Increase Rates	45 days	Tue 6/8/04	Mon 8/8/04	0%				
11	Stage 2 Board decision re rates	30 days	Tue 4/26/05	Mon 6/6/05	0%				
12	Stage 2 Increase Rates	45 days	Tue 6/7/05	Mon 8/8/05	0%				
13	Environmental Impact Report	231 days	Mon 5/3/04	Mon 3/21/05	0%				
14	Notice of Preparation NOP	20 days	Mon 5/3/04	Fri 6/28/04	0%				
15	Prep of Admin Draft EIR, consultations	90 days	Mon 5/3/04	Fri 8/30/04	0%				
16	Public Comment	30 days	Mon 9/6/04	Fri 10/15/04	0%				
17	Response to Comments/Final EIR	81 days	Mon 10/18/04	Mon 2/7/05	0%				
18	Certification	30 days	Tue 2/8/05	Mon 3/21/05	0%				
19	Design Activities	340 days	Mon 11/29/04	Fri 3/17/06	0%				
20	Preliminary Design	80 days	Mon 11/29/04	Fri 3/18/05	0%				
21	Detailed Design	260 days	Mon 3/21/05	Fri 3/17/06	0%				
22	Construction Activities	741 days	Mon 3/12/06	Mon 4/18/09	0%				
23	Advertise for Bids	35 days	Mon 3/20/06	Fri 5/5/06	0%				
24	Analyze Bids	15 days	Mon 5/8/06	Fri 5/26/06	0%				
25	Notice to Proceed	1 day	Mon 5/28/06	Mon 5/28/06	0%				
26	Complete Transfer P/S Pipeline	400 days	Tue 5/30/06	Mon 12/10/07	0%				
27	Complete new Primary at NTP	400 days	Tue 6/30/06	Mon 12/10/07	0%				
28	Transfer Flows from ITP to NTP	60 days	Tue 12/11/07	Mon 3/12/08	0%				
29	Decommission ITP	18 days	Tue 3/4/08	Thu 3/27/08	0%				
30	Substantial Completion of NTP	500 days	Tue 5/30/06	Mon 6/15/08	0%				
31	Start-up/Commissioning	60 days	Tue 9/15/08	Mon 12/8/08	0%				
32	Final Completion of New Plant	30 days	Tue 12/8/08	Mon 1/19/09	0%				

Project NSD rev schedule april 27  
Date Vied 4/28/04

Critical  
 Critical Split  
 Critical Progress  
 Task

Split  
 Task Progress  
 Baseline  
 Baseline Split

Milestone  
 Summary Progress  
 Summary

Project Summary  
 External Tasks  
 External Milestone  
 Deadline

**Attachment H**  
**Pretreatment Program Requirements**

### **Pretreatment Program Provisions**

1. The Discharger shall implement all pretreatment requirements contained in 40 CFR 403, as amended. The Discharger shall be subject to enforcement actions, penalties, and fines as provided in the Clean Water Act (33 USC 1351 et seq.), as amended. The Discharger shall implement and enforce its Approved Pretreatment Program or modified Pretreatment Program as directed by the Board's Executive Officer or the EPA. The EPA and/or the State may initiate enforcement action against an industrial user for noncompliance with applicable standards and requirements as provided in the Clean Water Act.
2. The Discharger shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d) and 402(b) of the Clean Water Act. The Discharger shall cause industrial users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of the discharge.
3. The Discharger shall perform the pretreatment functions as required in 40 CFR Part 403 and amendments or modifications thereto including, but not limited to:
  - i) Implement the necessary legal authorities to fully implement the pretreatment regulations as provided in 40 CFR 403.8(f)(1);
  - ii) Implement the programmatic functions as provided in 40 CFR 403.8(f)(2);
  - iii) Publish an annual list of industrial users in significant noncompliance as provided per 40 CFR 403.8(f)(2)(vii);
  - iv) Provide for the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403.8(f)(3); and
  - v) Enforce the national pretreatment standards for prohibited discharges and categorical standards as provided in 40 CFR 403.5 and 403.6, respectively.
4. The Discharger shall submit annually a report to the EPA Region 9, the State Board and the Regional Board describing its pretreatment program activities over the previous twelve months. In the event that the Discharger is not in compliance with any conditions or requirements of the Pretreatment Program, the Discharger shall also include the reasons for noncompliance and a plan and schedule for achieving compliance. The report shall contain, but is not limited to, the information specified in Appendix A entitled, "Requirements for Pretreatment Annual Reports," which is made a part of this Order. The annual report is due on the last day of February each year.
5. The Discharger shall submit semiannual pretreatment reports to the EPA Region 9, the State Board and the Board describing the status of its significant industrial users (SIUs). The report shall contain, but is not limited to, the information specified in Appendix B entitled, "Requirements for Semiannual Pretreatment Reports," which is made part of this Order. The semiannual reports are due July 31<sup>st</sup> (for the period January through June) and January 31<sup>st</sup> (for the period July through December) of each year. The Executive Officer may exempt a Discharger from the semiannual reporting requirements on a case by case basis subject to State Board and EPA's comment and approval.

6. The Discharger may combine the annual pretreatment report with the semiannual pretreatment report (for the July through December reporting period). The combined report shall contain all of the information requested in Appendices A and B and will be due on January 31<sup>st</sup> of each year.
7. The Discharger shall conduct the monitoring of its treatment plant's influent, effluent, and sludge as described in Appendix C entitled, "Requirements for Influent, Effluent and Sludge Monitoring," which is made part of this Order. The results of the sampling and analysis, along with a discussion of any trends, shall be submitted in the semiannual reports. A tabulation of the data shall be included in the annual pretreatment report. The Executive Officer may require more or less frequent monitoring on a case by case basis.

## **APPENDIX A**

### **REQUIREMENTS FOR PRETREATMENT ANNUAL REPORTS**

The Pretreatment Annual Report is due each year on the last day of February. [If the annual report is combined with the semiannual report (for the July through December period) the submittal deadline is January 31<sup>st</sup> of each year.] The purpose of the Annual Report is 1) to describe the status of the Publicly Owned Treatment Works (POTW) pretreatment program and 2) to report on the effectiveness of the program, as determined by comparing the results of the preceding year's program implementation. The report shall contain at a minimum, but is not limited to, the following information:

1) **Cover Sheet**

The cover sheet must contain the name(s) and National Pollutant Discharge Elimination Discharge System (NPDES) permit number(s) of those POTWs that are part of the Pretreatment Program. Additionally, the cover sheet must include: the name, address and telephone number of a pretreatment contact person; the period covered in the report; a statement of truthfulness; and the dated signature of a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for overall operation of the POTW (40 CFR 403.12(j)).

2) **Introduction**

The Introduction shall include any pertinent background information related to the Discharger, the POTW and/or the industrial user base of the area. Also, this section shall include an update on the status of any Pretreatment Compliance Inspection (PCI) tasks, Pretreatment Performance Evaluation tasks, Pretreatment Compliance Audit (PCA) tasks, Cleanup and Abatement Order (CAO) tasks, or other pretreatment-related enforcement actions required by the Regional Board or the EPA. A more specific discussion shall be included in the section entitled, "Program Changes."

3) **Definitions**

This section shall contain a list of key terms and their definitions that the Discharger uses to describe or characterize elements of its pretreatment program.

4) **Discussion of Upset, Interference and Pass Through**

This section shall include a discussion of Upset, Interference or Pass Through incidents, if any, at the POTW(s) that the Discharger knows of or suspects were caused by industrial discharges. Each incident shall be described, at a minimum, consisting of the following information:

- a) a description of what occurred;
- b) a description of what was done to identify the source;
- c) the name and address of the IU responsible
- d) the reason(s) why the incident occurred;
- e) a description of the corrective actions taken; and



- f) an examination of the local and federal discharge limits and requirements for the purposes of determining whether any additional limits or changes to existing requirements may be necessary to prevent other Upset, Interference or Pass Through incidents.

5) **Influent, Effluent and Sludge Monitoring Results**

This section shall provide a summary of the analytical results from the "Influent, Effluent and Sludge Monitoring" as specified in Appendix C. The results should be reported in a summary matrix that lists monthly influent and effluent metal results for the reporting year.

A graphical representation of the influent and effluent metal monitoring data for the past five years shall also be provided with a discussion of any trends.

6) **Inspection and Sampling Program**

This section shall contain at a minimum, but is not limited to, the following information:

- a) Inspections: the number of inspections performed for each type of IU; the criteria for determining the frequency of inspections; the inspection format procedures;
- b) Sampling Events: the number of sampling events performed for each type of IU; the criteria for determining the frequency of sampling; the chain of custody procedures.

7) **Enforcement Procedures**

This section shall provide information as to when the approved Enforcement Response Plan (ERP) had been formally adopted or last revised. In addition, the date the finalized ERP was submitted to the Regional Board shall also be given.

8) **Federal Categories**

This section shall contain a list of all of the federal categories that apply to the Discharger. The specific category shall be listed including the subpart and 40 CFR section that applies. The maximum and average limits for the each category shall be provided. This list shall indicate the number of Categorical Industrial Users (CIUs) per category and the CIUs that are being regulated pursuant to the category. The information and data used to determine the limits for those CIUs for which a combined waste stream formula is applied shall also be provided.

9) **Local Standards**

This section shall include a table presenting the local limits.

10) **Updated List of Regulated SIUs**

This section shall contain a complete and updated list of the Discharger's Significant Industrial Users (SIUs), including their names, addresses, and a brief description of the individual SIU's type of business. The list shall include all deletions and additions keyed to the list as submitted in the previous annual report. All deletions shall be briefly explained.

11) **Compliance Activities**

- a) **Inspection and Sampling Summary:** This section shall contain a summary of all the inspections and sampling activities conducted by the Discharger over the past year to gather information and data regarding the SIUs. The summary shall include:
- (1) the number of inspections and sampling events conducted for each SIU;
  - (2) the quarters in which these activities were conducted; and
  - (3) the compliance status of each SIU, delineated by quarter, and characterized using all applicable descriptions as given below:
    - (a) in consistent compliance;
    - (b) in inconsistent compliance;
    - (c) in significant noncompliance;
    - (d) on a compliance schedule to achieve compliance, (include the date final compliance is required);
    - (e) not in compliance and not on a compliance schedule;
    - (f) compliance status unknown, and why not.
- b) **Enforcement Summary:** This section shall contain a summary of the compliance and enforcement activities during the past year. The summary shall include the names of all the SIUs affected by the following actions:
- (1) Warning letters or notices of violations regarding SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.
  - (2) Administrative Orders regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.
  - (3) Civil actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.
  - (4) Criminal actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

- (5) Assessment of monetary penalties. Identify the amount of penalty in each case and reason for assessing the penalty.
- (6) Order to restrict/suspend discharge to the POTW.
- (7) Order to disconnect the discharge from entering the POTW.

**12) Baseline Monitoring Report Update**

This section shall provide a list of CIUs that have been added to the pretreatment program since the last annual report. This list of new CIUs shall summarize the status of the respective Baseline Monitoring Reports (BMR). The BMR must contain all of the information specified in 40 CFR 403.12(b). For each of the new CIUs, the summary shall indicate when the BMR was due; when the CIU was notified by the POTW of this requirement; when the CIU submitted the report; and/or when the report is due.

**13) Pretreatment Program Changes**

This section shall contain a description of any significant changes in the Pretreatment Program during the past year including, but not limited to: legal authority, local limits, monitoring/inspection program and frequency, enforcement protocol, program's administrative structure, staffing level, resource requirements and funding mechanism. If the manager of the pretreatment program changes, a revised organizational chart shall be included. If any element(s) of the program is in the process of being modified, this intention shall also be indicated.

**14) Pretreatment Program Budget**

This section shall present the budget spent on the Pretreatment Program. The budget, either by the calendar or fiscal year, shall show the amounts spent on personnel, equipment, chemical analyses and any other appropriate categories. A brief discussion of the source(s) of funding shall be provided.

**15) Public Participation Summary**

This section shall include a copy of the public notice as required in 40 CFR 403.8(f)(2)(vii). If a notice was not published, the reason shall be stated.

**16) Sludge Storage and Disposal Practice**

This section shall have a description of how the treated sludge is stored and ultimately disposed. The sludge storage area, if one is used, shall be described in detail. Its location, a description of the containment features and the sludge handling procedures shall be included.

**17) PCS Data Entry Form**

The annual report shall include the PCS Data Entry Form. This form shall summarize the enforcement actions taken against SIUs in the past year. This form shall include the following information: the POTW name, NPDES Permit number, period covered by the report, the number of SIUs in significant noncompliance (SNC) that are on a pretreatment compliance schedule, the number of notices of violation and administrative orders issued against SIUs, the number of civil

and criminal judicial actions against SIUs, the number of SIUs that have been published as a result of being in SNC, and the number of SIUs from which penalties have been collected.

18) **Other Subjects**

Other information related to the Pretreatment Program that does not fit into one of the above categories should be included in this section.

Signed copies of the reports shall be submitted to the Regional Administrator at USEPA, the State Water Resources Control Board and the Regional Board at the following addresses:

Regional Administrator  
United States Environmental Protection Agency  
Region 9, Mail Code: WTR-7  
Clean Water Act Compliance Office  
Water Division  
75 Hawthorne Street  
San Francisco, CA 94105

Pretreatment Program Manager  
Regulatory Unit  
State Water Resources Control Board  
Division of Water Quality  
1001 I Street  
Sacramento, CA 95814

Pretreatment Coordinator  
NPDES Permits Division  
SF Bay Regional Water Quality Control Board  
1515 Clay Street, Suite 1400  
Oakland, CA 94612

## **APPENDIX B:**

### **REQUIREMENTS FOR SEMIANNUAL PRETREATMENT REPORTS**

The semiannual pretreatment reports are due on July 31<sup>st</sup> (for pretreatment program activities conducted from January through June) and January 31<sup>st</sup> (for pretreatment activities conducted from July through December) of each year, unless an exception has been granted by the Board's Executive Officer. The semiannual reports shall contain, at a minimum, but is not limited to, the following information:

#### **1) Influent, Effluent and Sludge Monitoring**

The influent, effluent and sludge monitoring results shall be included in the report. The analytical laboratory report shall also be included, with the QA/QC data validation provided upon request. A description of the sampling procedures and a discussion of the results shall be given. (Please see Appendix C for specific detailed requirements.) The contributing source(s) of the parameters that exceed NPDES limits shall be investigated and discussed. In addition, a brief discussion of the contributing source(s) of all organic compounds identified shall be provided.

The Discharger has the option to submit all monitoring results via an electronic reporting format approved by the Executive Officer. The procedures for submitting the data will be similar to the electronic submittal of the NPDES self-monitoring reports as outlined in the December 17, 1999 Regional Board letter, Official Implementation of Electronic Reporting System (ERS). The Discharger shall contact the Regional Board's ERS Project Manager for specific details in submitting the monitoring data.

If the monitoring results are submitted electronically, the analytical laboratory reports (along with the QA/QC data validation) should be kept at the discharger's facility.

#### **2) Industrial User Compliance Status**

This section shall contain a list of all Significant Industrial Users (SIUs) that were not in consistent compliance with all pretreatment standards/limits or requirements for the reporting period. The compliance status for the previous reporting period shall also be included. Once the SIU has determined to be out of compliance, the SIU shall be included in the report until consistent compliance has been achieved. A brief description detailing the actions that the SIU undertook to come back into compliance shall be provided.

For each SIU on the list, the following information shall be provided:

- a. Indicate if the SIU is subject to Federal categorical standards; if so, specify the category including the subpart that applies.
- b. For SIUs subject to Federal Categorical Standards, indicate if the violation is of a categorical or local standard.
- c. Indicate the compliance status of the SIU for the two quarters of the reporting period.
- d. For violations/noncompliance occurring in the reporting period, provide (1) the date(s) of violation(s); (2) the parameters and corresponding concentrations exceeding the limits

and the discharge limits for these parameters and (3) a brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

3) **POTW's Compliance with Pretreatment Program Requirements**

This section shall contain a discussion of the Discharger's compliance status with the Pretreatment Program Requirements as indicated in the latest Pretreatment Compliance Audit (PCA) Report, Pretreatment Compliance Inspection (PCI) Report or Pretreatment Performance Evaluation (PPE) Report. It shall contain a summary of the following information:

- a. Date of latest PCA, PCI or PPE and report.
- b. Date of the Discharger's response.
- c. List of unresolved issues.
- d. Plan and schedule for resolving the remaining issues.

The reports shall be signed by a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for the overall operation of the Publicly Owned Treatment Works (POTW) (40 CFR 403.12(j)). Signed copies of the reports shall be submitted to the Regional Administrator at USEPA, the State Water Resources Control Board and the Regional Board at the following addresses:

Regional Administrator  
United States Environmental Protection Agency  
Region 9, Mail Code: WTR-7  
Clean Water Act Compliance Office  
Water Division  
75 Hawthorne Street  
San Francisco, CA 94105

Pretreatment Program Manager  
Regulatory Unit  
State Water Resources Control Board  
Division of Water Quality  
1001 I Street  
Sacramento, CA 95814

Pretreatment Coordinator  
NPDES Permits Division  
SF Bay Regional Water Quality Control Board  
1515 Clay Street, Suite 1400  
Oakland, CA 94612

## **APPENDIX C**

### **REQUIREMENTS FOR INFLUENT, EFFLUENT AND SLUDGE MONITORING**

The Discharger shall conduct sampling of its treatment plant's influent, effluent and sludge at the frequency as shown in Table 5 on Page 8 of the Self-Monitoring Program (SMP).

The monitoring and reporting requirements of the POTW's Pretreatment Program are in addition to those specified in Table 1 of the SMP. Any subsequent modifications of the requirements specified in Table 1 shall be adhered to and shall not affect the requirements described in this Appendix unless written notice from the Regional Board is received. When sampling periods coincide, one set of test results, reported separately, may be used for those parameters that are required to be monitored by both Table 1 and the Pretreatment Program. The Pretreatment Program monitoring reports shall be sent to the Pretreatment Program Coordinator.

#### **1. Influent and Effluent Monitoring**

The Discharger shall monitor for the parameters using the required test methods listed in Table 4 on page 7 of the SMP. Any test method substitutions must have received prior written Regional Board approval. Influent and Effluent sampling locations shall be the same as those sites specified in the Self-Monitoring Program.

The influent and effluent sampled should be taken during the same 24-hour period. All samples must be representative of daily operations. A grab sample shall be used for volatile organic compounds, cyanide and phenol. In addition, any samples for oil and grease, polychlorinated biphenyls, dioxins/furans, and polynuclear aromatic hydrocarbons shall be grab samples. For all other pollutants, 24-hour composite samples must be obtained through flow-proportioned composite sampling. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto. For effluent monitoring, the reporting limits for the individual parameters shall be at or below the minimum levels (MLs) as stated in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2000) [also known as the State Implementation Policy (SIP)]; any revisions to the MLs shall be adhered to. If a parameter does not have a stated minimum level, then the Discharger shall conduct the analysis using the lowest commercially available and reasonably achievable detection levels.

The following standardized report format should be used for submittal of the influent and effluent monitoring report. A similar structured format may be used but will be subject to Regional Board approval. The monitoring reports shall be submitted with the Semiannual Reports.

- A. Sampling Procedures – This section shall include a brief discussion of the sample locations, collection times, how the sample was collected (i.e., direct collection using vials or bottles, or other types of collection using devices such as automatic samplers, buckets, or beakers), types of containers used, storage procedures and holding times. Include description of prechlorination and chlorination/dechlorination practices during the sampling periods.

- B. Method of Sampling Dechlorination – A brief description of the sample dechlorination method prior to analysis shall be provided.
- C. Sample Compositing – The manner in which samples are composited shall be described. If the compositing procedure is different from the test method specifications, a reason for the variation shall be provided.
- D. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Board upon request.
- E. A tabulation of the test results shall be provided.
- F. Discussion of Results – The report shall include a complete discussion of the test results. If any pollutants are detected in sufficient concentration to upset, interfere or pass through plant operations, the type of pollutant(s) and potential source(s) shall be noted, along with a plan of action to control, eliminate, and/or monitor the pollutant(s). Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

## 2. Sludge Monitoring

Sludge should be sampled in the same 24-hour period during which the influent and effluent are sampled except as noted in (C) below. The same parameters required for influent and effluent analysis shall be included in the sludge analysis. The sludge analyzed shall be a composite sample of the sludge for final disposal consisting of:

- A. Sludge lagoons – 20 grab samples collected at representative equidistant intervals (grid pattern) and composited as a single grab, or
- B. Dried stockpile – 20 grab samples collected at various representative locations and depths and composited as a single grab, or
- C. Dewatered sludge- daily composite of 4 representative grab samples each day for 5 days taken at equal intervals during the daily operating shift taken from a) the dewatering units or b) from each truckload, and shall be combined into a single 5-day composite.

The U.S. EPA manual, POTW Sludge Sampling and Analysis Guidance Document, August 1989, containing detailed sampling protocols specific to sludge is recommended as a guidance for sampling procedures. The U.S. EPA manual Analytical Methods of the National Sewage Sludge Survey, September 1990, containing detailed analytical protocols specific to sludge, is recommended as a guidance for analytical methods.



In determining if the sludge is a hazardous waste, the Dischargers shall adhere to Article 2, "Criteria for Identifying the Characteristics of Hazardous Waste," and Article 3, "Characteristics of Hazardous Waste," of Title 22, California Code of Regulations, Sections 66261.10 to 66261.24 and all amendments thereto.

Sludge monitoring reports shall be submitted with the appropriate Semiannual Report. The following standardized report format should be used for submittal of the report. A similarly structured form may be used but will be subject to Regional Board approval.

- A. Sampling procedures – Include sample locations, collection procedures, types of containers used, storage/refrigeration methods, compositing techniques and holding times. Enclose a map of sample locations if sludge lagoons or stockpiled sludge is sampled.
- B. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Board upon request.
- C. Test Results – Tabulate the test results and include the percent solids.
- D. Discussion of Results – The report shall include a complete discussion of test results. If the detected pollutant(s) is reasonably deemed to have an adverse effect on sludge disposal, a plan of action to control, eliminate, and/or monitor the pollutant(s) and the known or potential source(s) shall be included. Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

The Discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants that the permittee believes may be causing or contributing to Interference, Pass Through or adversely impacting sludge quality.